## Sequence Listing



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 ccgggtggct gatgacactg aagaaaacct tcgtc 535
<210> 9
<211> 434
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 32, 54, 80, 111, 117, 122, 139, 193, 205, 221, 226, 228, 273,
      293, 296, 305, 336, 358, 361
<223> unknown base
<400> 9
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 caanaaattg gggagcaggg caaaacagtn acgggcagcc cacatcaaga 100
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 gttttggaca cccaaagtgt ttgagaaaat tttgatagac atnatcggag 200
 tggantttgc ctttgcagaa ntttgngntg ttcctttgcg gattttctcc 250
 tttttcccag ttccagtcac agngagggcg catctcaccg ggnggntgat 300
 gacantgaag aaaacctttg tccttgcccc cagctntttg gtgcggatca 350
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<211> 154
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 33, 49, 68, 83, 90, 98, 119
<223> unknown base
<400> 10
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 acactgaaga aaaccttngt ccttgccccc agntttgtgn tgcggatnat 100
 cgtcctcatc gccagcctng tggtcctacc ctacctgggg gtgcacggtg 150
 agac 154
<210> 11
<211> 24
<212> DNA
<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 11
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<211> 18
<212> DNA
<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 12
gctctgtcac tcacgctc 18
<210> 13
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<223> Synthetic oligonucleotide probe
<400> 13
 tcatctcttc cctctccc 18
<210> 14
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<212> DNA
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<400> 14
 ccttccgcca cggagttc 18
<210> 15
<211> 24
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<213> Homo sapiens
<400> 18
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 ctctgccccc tgcatcctgt gcagctgctg ccccgccagc cgcaactcca 150
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 tccatcatta tgctgagccc gggcgtggag agtcagctct acaagctgcc 250
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 ccctatccag tatccctgaa cagaaatgca acccccattt gccaacccag 950
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<210> 19

<211> 457

<212> PRT

<213> Homo sapiens

<400> 19

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Cys Leu Cys Gly Ser Ala Pro Cys Ile Leu Cys Ser Cys Cys Pro 20 25 30

Ala Ser Arg Asn Ser Thr Val Ser Arg Leu Ile Phe Thr Phe Phe
35 40 45

Leu Phe Leu Gly Val Leu Val Ser Ile Ile Met Leu Ser Pro Gly 50 55 60

Val Glu Ser Gln Leu Tyr Lys Leu Pro Trp Val Cys Glu Glu Gly Ala Gly Ile Pro Thr Val Leu Gln Gly His Ile Asp Cys Gly Ser Leu Leu Gly Tyr Arg Ala Val Tyr Arg Met Cys Phe Ala Thr Ala Ala Phe Phe Phe Phe Phe Thr Leu Leu Met Leu Cys Val Ser 115 Ser Ser Arg Asp Pro Arg Ala Ala Ile Gln Asn Gly Phe Trp Phe 125 Phe Lys Phe Leu Ile Leu Val Gly Leu Thr Val Gly Ala Phe Tyr 140 Ile Pro Asp Gly Ser Phe Thr Asn Ile Trp Phe Tyr Phe Gly Val 155 Val Gly Ser Phe Leu Phe Ile Leu Ile Gln Leu Val Leu Leu Ile 175 170 Asp Phe Ala His Ser Trp Asn Gln Arg Trp Leu Gly Lys Ala Glu Glu Cys Asp Ser Arg Ala Trp Tyr Ala Gly Leu Phe Phe Thr Leu Leu Phe Tyr Leu Leu Ser Ile Ala Ala Val Ala Leu Met Phe Met Tyr Tyr Thr Glu Pro Ser Gly Cys His Glu Gly Lys Val Phe Ile Ser Leu Asn Leu Thr Phe Cys Val Cys Val Ser Ile Ala Ala 250 Val Leu Pro Lys Val Gln Asp Ala Gln Pro Asn Ser Gly Leu Leu 265 Gln Ala Ser Val Ile Thr Leu Tyr Thr Met Phe Val Thr Trp Ser 280 Ala Leu Ser Ser Ile Pro Glu Gln Lys Cys Asn Pro His Leu Pro 295 Thr Gln Leu Gly Asn Glu Thr Val Val Ala Gly Pro Glu Gly Tyr 310 Glu Thr Gln Trp Trp Asp Ala Pro Ser Ile Val Gly Leu Ile Ile 325 Phe Leu Leu Cys Thr Leu Phe Ile Ser Leu Arg Ser Ser Asp His 340 Arg Gln Val Asn Ser Leu Met Gln Thr Glu Glu Cys Pro Pro Met

<211> 18

360 355 350 Leu Asp Ala Thr Gln Gln Gln Gln Gln Val Ala Ala Cys Glu Gly Arg Ala Phe Asp Asn Glu Gln Asp Gly Val Thr Tyr Ser Tyr 390 385 Ser Phe Phe His Phe Cys Leu Val Leu Ala Ser Leu His Val Met Met Thr Leu Thr Asn Trp Tyr Lys Pro Gly Glu Thr Arg Lys Met Ile Ser Thr Trp Thr Ala Val Trp Val Lys Ile Cys Ala Ser Trp Ala Gly Leu Leu Tyr Leu Trp Thr Leu Val Ala Pro Leu Leu 450 445 Leu Arg Asn Arg Asp Phe Ser 455 <210> 20 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 20 gccgcctcat cttcacgttc ttcc 24 <210> 21 <211> 20 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 21 tcatccagct ggtgctgctc 20 <210> 22 <211> 20 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 22 cttcttccac ttctgcctgg 20 <210> 23

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<210> 26
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<223> Synthetic oligonucleotide probe
<400> 26
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<210> 27
<211> 1351
<212> DNA
<213> Homo sapiens
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 cgcggcacgt ccgcgaggac ttgaagtcct gagcgctcaa gtttgtccgt 150
 aggtcgagag aaggccatgg aggtgccgcc accggcaccg cggagctttc 200
 tetgtagage attgtgeeta ttteecegag tetttgetge egaagetgtg 250
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cccagagccc tattacccgg aatctggatg ggaccgcctc cgggagctgt 350
ttggcaaaga tgaacagcag agaatttcaa aggaccttgc taatatctgt 400
aagacggcag ctacagcagg catcattggc tgggtgtatg ggggaatacc 450
agcttttatt catgctaaac aacaatacat tgagcagagc caggcagaaa 500
tttatcataa ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca 550
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tttaggataa acgtaggcct gcgtggcctg gtggctggtg gcataattgg 750
agcettgetg ggcacteetg taggaggeet getgatggea tttcagaagt 800
acgctggtga gactgttcag gaaagaaaac agaaggatcg aaaggcactc 850
catgagctaa aactggaaga gtggaaaggc agactacaag ttactgagca 900
cctccctgag aaaattgaaa gtagtttacg ggaagatgaa cctgagaatg 950
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atagataaac aagacaagga ctgaaagtgc tctgaacttg aaactcactg 1050
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tctttggtca gcctgctgac aaatttaagt gctggtacct gtggtggcag 1150
tggcttgctc ttgtcttttt cttttctttt taactaagaa tggggctgtt 1200
ttaatctatc aatatatgca tacatggata tatccaccca cctagatttt 1300
aagcagtaaa taaaacattt cgcaaaagat taaagttgaa ttttacagtt 1350
t 1351
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<210> 28

<211> 285

<212> PRT

<213> Homo sapiens

<400> 28

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Leu Cys Leu Phe Pro Arg Val Phe Ala Ala Glu Ala Val Thr Ala 20 25 30

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Pro Glu Pro Tyr Tyr Pro Glu Ser Gly Trp Asp Arg Leu Arg Glu
Leu Phe Gly Lys Asp Glu Gln Gln Arg Ile Ser Lys Asp Leu Ala
Asn Ile Cys Lys Thr Ala Ala Thr Ala Gly Ile Ile Gly Trp Val
Tyr Gly Gly Ile Pro Ala Phe Ile His Ala Lys Gln Gln Tyr Ile
Glu Gln Ser Gln Ala Glu Ile Tyr His Asn Arg Phe Asp Ala Val
                                                         120
                                     115
                110
Gln Ser Ala His Arg Ala Ala Thr Arg Gly Phe Ile Arg Tyr Gly
                                                         135
                                     130
Trp Arg Trp Gly Trp Arg Thr Ala Val Phe Val Thr Ile Phe Asn
                                                         150
                                     145
Thr Val Asn Thr Ser Leu Asn Val Tyr Arg Asn Lys Asp Ala Leu
                                     160
                155
Ser His Phe Val Ile Ala Gly Ala Val Thr Gly Ser Leu Phe Arg
                                     175
                170
Ile Asn Val Gly Leu Arg Gly Leu Val Ala Gly Gly Ile Ile Gly
Ala Leu Leu Gly Thr Pro Val Gly Gly Leu Leu Met Ala Phe Gln
                                                         210
                                     205
                 200
Lys Tyr Ala Gly Glu Thr Val Gln Glu Arg Lys Gln Lys Asp Arg
                 215
Lys Ala Leu His Glu Leu Lys Leu Glu Glu Trp Lys Gly Arg Leu
                 230
Gln Val Thr Glu His Leu Pro Glu Lys Ile Glu Ser Ser Leu Arg
Glu Asp Glu Pro Glu Asn Asp Ala Lys Lys Ile Glu Ala Leu Leu
Asn Leu Pro Arg Asn Pro Ser Val Ile Asp Lys Gln Asp Lys Asp
                                                          285
                 275
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<sup>&</sup>lt;210> 29

<sup>&</sup>lt;211> 324

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 29

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ctattacccg gaatctggat gggaccgctc cgggagctgt ttggcaaaga 100
tgaacagcag agaatttcaa aggaccttgc taatatctgt aagacggcag 150
ctacagcagg catcattggc tgggtgtatg ggggaatacc agcttttatt 200
catgctaaac aacaatacat tgagcagagc caggcagaaa tttatcataa 250
ccggtttgat gctgtgcaat ctgcacatcg tgctgccaca cgaggcttca 300
ttcgttcatg gctggcgccg aacc 324

<210> 30 <211> 377 <212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 262, 330, 371

<223> unknown base

<400> 30

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<210> 31 <211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 31

tcgtacagtt acgctctccc 20

<210> 32

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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cttgaggagc gtcagaagcg 20
<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 33
ataacgaatg aagcctcgtg 20
<210> 34
<211> 40
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 34
gctaatatct gtaagacggc agctacagca ggcatcattg 40
<210> 35
<211> 1819
<212> DNA
<213> Homo sapiens
<400> 35
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 gacaaagcag ctgtcaggga acctccgccg gagtcgaatt tacgtgcagc 150
 tqccqqcaac cacagqttcc aagatggttt gcgggggctt cgcgtgttcc 200
 aagaactgcc tgtgcgccct caacctgctt tacaccttgg ttagtctgct 250
 gctaattgga attgctgcgt ggggcattgg cttcgggctg atttccagtc 300
 tccgagtggt cggcgtggtc attgcagtgg gcatcttctt gttcctgatt 350
 gctttagtgg gtctgattgg agctgtaaaa catcatcagg tgttgctatt 400
 tttttatatg attattctgt tacttgtatt tattgttcag ttttctgtat 450
 cttgcgcttg tttagccctg aaccaggagc aacagggtca gcttctggag 500
 gttggttgga acaatacggc aagtgctcga aatgacatcc agagaaatct 550
 aaactgctgt gggttccgaa gtgttaaccc aaatgacacc tgtctggcta 600
 gctgtgttaa aagtgaccac tcgtgctcgc catgtgctcc aatcatagga 650
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<210> 36
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<sup>&</sup>lt;211> 204

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 36

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Leu Asn Leu Leu Tyr Thr Leu Val Ser Leu Leu Leu Ile Gly Ile 20 25 30

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Ala Ala Trp Gly Ile Gly Phe Gly Leu Ile Ser Ser Leu Arg Val
Val Gly Val Val Ile Ala Val Gly Ile Phe Leu Phe Leu Ile Ala
                 50
                                     55
Leu Val Gly Leu Ile Gly Ala Val Lys His His Gln Val Leu Leu
                                     70
Phe Phe Tyr Met Ile Ile Leu Leu Leu Val Phe Ile Val Gln Phe
                                                          90
Ser Val Ser Cys Ala Cys Leu Ala Leu Asn Gln Glu Gln Gly
Gln Leu Leu Glu Val Gly Trp Asn Asn Thr Ala Ser Ala Arg Asn
                                                         120
                                    115
                110
Asp Ile Gln Arg Asn Leu Asn Cys Cys Gly Phe Arg Ser Val Asn
                125
Pro Asn Asp Thr Cys Leu Ala Ser Cys Val Lys Ser Asp His Ser
                                                         150
                140
                                    145
Cys Ser Pro Cys Ala Pro Ile Ile Gly Glu Tyr Ala Gly Glu Val
                                    160
Leu Arg Phe Val Gly Gly Ile Gly Leu Phe Phe Ser Phe Thr Glu
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Ile Leu Gly Val Trp Leu Thr Tyr Arg Tyr Arg Asn Gln Lys Asp

Pro Arg Ala Asn Pro Ser Ala Phe Leu 200

<210> 37

<211> 390

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 20, 35, 61, 83, 106, 130, 133, 187, 232, 260, 336

<223> unknown base

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 tagccntgaa ccaggagcaa cagggtcagn ttntggaggt tggttggaac 150
 aatacggcaa gtgctcgaaa tgacatccag agaaatntaa actgctgtgg 200
 gttccgaagt gttaacccaa atgacacctg tntggctagc tgtgttaaaa 250
 qtgaccactn qtqctcgcca tgtgctccaa tcataggaga atatgctgga 300

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gaggttttga gatttgttgg tggcattggc ctgttnttca gttttacaga 350
 gatcctgggt gtttggctga cctacagata caggaaccag 390
<210> 38
<211> 566
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 27
<223> unknown base
<400> 38
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 ttacaccaat gtattctaga atagttatgt cttaggaaat tgtggtttaa 150
 tttttgactt ttacaggtaa gtgcaaagga gaagtggttt catgaaatgt 200
 tctaatgtat aataacattt accttcagcc tcccatcaga atggaacgag 250
 ttttgagtaa tccaggaagt atatctatat gatcttgata ttgttttata 300
 taatttgaag totaaaagac tgcattttta aacaagttag tattaatgcg 350
 ttggcccacg tagcaaaaag atatttgatt atcttaaaaa ttgttaaata 400
 ccgttttcat gaaagttctc agtattgtaa cagcaacttg tcaaacctaa 450
 gcatatttga atatgatctc ccataatttg aaattgaaat cgtattgtgt 500
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 gttgtgcccc acttgc 566
<210> 39
<211> 264
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 84-85, 206
<223> unknown base
<400> 39
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Gln Ile Pro Thr Ala Ser Glu Asp His Ser Gly Ser Tyr Trp Cys
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Thr Leu Asn Pro Ala Pro Gln Lys Ser Ala Ala Pro Gly Thr Ala
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Pro Glu Glu Ala Pro Gly Pro Leu Pro Pro Pro Pro Thr Pro Ser
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Gln Lys Leu Ser Val Ser Lys Pro Thr Val Thr Thr Gly Ser Gly 145

Tyr Gly Phe Thr Val Pro Gln Gly Met Arg Ile Ser Leu Gln Cys
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<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

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Lys Ala Gly	Leu Lys 395	Lys	Ser	Met	Thr	Pro 400	Thr	Gln	Asn	Arg	Glu 405
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Phe Leu Cys	Asn Ala 440	Ser	Glu	Arg	Glu	Val 445	Ala	Ala	Phe	Ser	Asn 450
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Ser Val Arg Ser Gly Asp Leu Trp Ile Pro Val Lys Ser Phe Asp 50 55 60

Ser Lys Asn His Pro Glu Val Leu Asn Ile Arg Leu Gln Arg Glu 65 70 75

Ser Lys Glu Leu Ile Ile Asn Leu Glu Arg Asn Glu Gly Leu Ile 80 85 90

Ala Ser Ser Phe Thr Glu Thr His Tyr Leu Gln Asp Gly Thr Asp 95 100 105

Val Ser Leu Ala Arg Asn Tyr Thr Gly His Cys Tyr Tyr His Gly
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His Val Arg Gly Tyr Ser Asp Ser Ala Val Ser Leu Ser Thr Cys 125 130 135

Ser Gly Leu Arg Gly Leu Ile Val Phe Glu Asn Glu Ser Tyr Val 140 145 150

Leu Glu Pro Met Lys Ser Ala Thr Asn Arg Tyr Lys Leu Phe Pro 155 160 165

Ala Lys Lys Leu Lys Ser Val Arg Gly Ser Cys Gly Ser His His
170 175 180

Asn Thr Pro Asn Leu Ala Ala Lys Asn Val Phe Pro Pro Pro Ser 185 190 195

Gln Thr Trp Ala Arg Arg His Lys Arg Glu Thr Leu Lys Ala Thr 200 205 210

Lys	Tyr	Val	Glu	Leu 215	Val	Ile	Val	Ala	Asp 220	Asn	Arg	Glu	Phe	Gln 225
Arg	Gln	Gly	Lys	Asp 230	Leu	Glu	Lys	Val	Lys 235	Gln	Arg	Leu	Ile	Glu 240
Ile	Ala	Asn	His	Val 245	Asp	Lys	Phe	Tyr	Arg 250	Pro	Leu	Asn	Ile	Arg 255
Ile	Val	Leu	Val	Gly 260	Val	Glu	Val	Trp	Asn 265	Asp	Met	Asp	Lys	Cys 270
Ser	Val	Ser	Gln	Asp 275	Pro	Phe	Thr	Ser	Leu 280	His	Glu	Phe	Leu	Asp 285
Trp	Arg	Lys	Met	Lys 290	Leu	Leu	Pro	Arg	Lys 295	Ser	His	Asp	Asn	Ala 300
Gln	Leu	Val	Ser	Gly 305	Val	Tyr	Phe	Gln	Gly 310	Thr	Thr	Ile	Gly	Met 315
Ala	Pro	Ile	Met	Ser 320	Met	Cys	Thr	Ala	Asp 325	Gln	Ser	Gly	Gly	Ile 330
Val	Met	Asp	His	Ser 335	Asp	Asn	Pro	Leu	Gly 340	Ala	Ala	Val	Thr	Leu 345
Ala	His	Glu	Leu	Gly 350	His	Asn	Phe	Gly	Met 355	Asn	His	Asp	Thr	Leu 360
Asp	Arg	Gly	Cys	Ser 365	Cys	Gln	Met	Ala	Val 370	Glu	Lys	Gly	Gly	Cys 375
Ile	Met	Asn	Ala	Ser 380	Thr	Gly	Tyr	Pro	Phe 385	Pro	Met	Val	Phe	Ser 390
Ser	Cys	Ser	Arg	Lys 395	Asp	Leu	Glu	Thr	Ser 400	Leu	Glu	Lys	Gly	Met 405
Gly	Val	Cys	Leu	Phe 410	Asn	Leu	Pro	Glu	Val 415	Arg	Glu	Ser	Phe	Gly 420
Gly	Gln	Lys	Суз	Gly 425	Asn	Arg	Phe	Val	Glu 430	Glu	Gly	Glu	Glu	Cys 435
Asp	Cys	Gly	Glu	Pro 440	Glu	Glu	Cys	Met	Asn 445	Arg	Cys	Cys	Asn	Ala 450
Thr	Thr	Cys	Thr	Leu 455		Pro	Asp	Ala	Val 460	Cys	Ala	His	Gly	Leu 465
Cys	Cys	Glu	Asp	Cys 470		Leu	Lys	Pro	Ala 475		Thr	Ala	Cys	Arg 480
Asp	Ser	Ser	Asn	Ser 485		Asp	Leu	Pro	Glu 490		Cys	Thr	Gly	Ala 495
Ser	Pro	His	Cys	Pro	Ala	Asn	Val	Tyr	Leu	His	Asp	Gly	His	Ser

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Cys Gln Asp Va	Asp Gly 515	Tyr Cys	Tyr Asn 520	Gly Ile	Cys Gln	Thr 525				
His Glu Gln Gl	n Cys Val 530	Thr Leu	Trp Gly 535	Pro Gly	Ala Lys	Pro 540				
Ala Pro Gly Il	e Cys Phe 545	Glu Arg	Val Asn 550	Ser Ala	Gly Asp	Pro 555				
Tyr Gly Asn Cy	Gly Lys 560	Val Ser	Lys Ser 565	Ser Phe	Ala Lys	Cys 570				
Glu Met Arg As	Ala Lys 575	Cys Gly	Lys Ile 580	Gln Cys	Gln Gly	Gly 585				
Ala Ser Arg Pr	Val Ile 590	Gly Thr	Asn Ala 595	Val Ser	Ile Glu	Thr 600				
Asn Ile Pro Le	u Gln Gln 605	Gly Gly	Arg Ile 610	Leu Cys	Arg Gly	Thr 615				
His Val Tyr Le	u Gly Asp 620	Asp Met	Pro Asp 625	Pro Gly	Leu Val	Leu 630				
Ala Gly Thr Ly	s Cys Ala 635	Asp Gly	Lys Ile 640	Cys Leu	Asn Arg	Gln 645				
Cys Gln Asn Il	e Ser Val 650	Phe Gly	Val His 655	Glu Cys	Ala Met	Gln 660				
Cys His Gly Ar	g Gly Val 665	Cys Asn	Asn Arg 670	Lys Asn	Cys His	Cys 675				
Glu Ala His Tr	p Ala Pro 680	Pro Phe	Cys Asp 685	Lys Phe	Gly Phe	Gly 690				
Gly Ser Thr As	p Ser Gly 695	Pro Ile	Arg Gln 700	Ala Glu	Ala Arg	Gln 705				
Glu Ala Ala Gl	u Ser Asn 710	Arg Glu	Arg Gly 715	Gln Gly	Gln Glu	Pro 720				
Val Gly Ser Gl	n Glu His 725	Ala Ser	Thr Ala 730	Ser Leu	Thr Leu	Ile 735				
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gcagccctga taactggtnt ntggctgcaa nttaatgctn tgatatggct 400
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Thr Ser Met Pro Glu Ala Thr Ala Ala Glu Thr Thr Lys Pro Ser 35 40 45

Asn Ser Ala Leu Gln Pro Thr Ala Gly Leu Leu Val Val Leu Leu 50 55 60

Ala Leu Leu His Leu Tyr His 65

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<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 87

<211> 29

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<211> 50

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<213> Artificial Sequence

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Ala Ser Asn Phe Glu Leu His Val Ala Gln Gly Asp His Phe Ile
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Lys Phe Phe Ala Pro Trp Cys Gly His Cys Lys Ala Leu Ala Pro
                215
Thr Trp Glu Gln Leu Ala Leu Gly Leu Glu His Ser Glu Thr Val
                230
Lys Ile Gly Lys Val Asp Cys Thr Gln His Tyr Glu Leu Cys Ser
Gly Asn Gln Val Arg Gly Tyr Pro Thr Leu Leu Trp Phe Arg Asp
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Gly Lys Lys Val Asp Gln Tyr Lys Gly Lys Arg Asp Leu Glu Ser
                                    280
Leu Arg Glu Tyr Val Glu Ser Gln Leu Gln Arg Thr Glu Thr Gly
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Ala Thr Glu Thr Val Thr Pro Ser Glu Ala Pro Val Leu Ala Ala
Glu Pro Glu Ala Asp Lys Gly Thr Val Leu Ala Leu Thr Glu Asn
Asn Phe Asp Asp Thr Ile Ala Glu Gly Ile Thr Phe Ile Lys Phe
Tyr Ala Pro Trp Cys Gly His Cys Lys Thr Leu Ala Pro Thr Trp
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Glu Glu Leu Ser Lys Lys Glu Phe Pro Gly Leu Ala Gly Val Lys
Ile Ala Glu Val Asp Cys Thr Ala Glu Arg Asn Ile Cys Ser Lys
Tyr Ser Val Arg Gly Tyr Pro Thr Leu Leu Leu Phe Arg Gly Gly
Lys Lys Val Ser Glu His Ser Gly Gly Arg Asp Leu Asp Ser Leu
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<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic oligonucleotide probe

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<211> 1016
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  gtctggatat tgatagccgt cctaccgctg aagtctgtgc cacacacaca 150
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<210> 97

<211> 277

<212> PRT

<213> Homo sapiens

<400> 97

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Asp Ser Arg Pro Thr Ala Glu Val Cys Ala Thr His Thr Ile Ser 35 40 45

Pro Gly Pro Lys Gly Asp Asp Gly Glu Lys Gly Asp Pro Gly Glu 50 55 60

Glu Gly Lys His Gly Lys Val Gly Arg Met Gly Pro Lys Gly Ile 65 70 75

Lys Gly Glu Leu Gly Asp Met Gly Asp Gln Gly Asn Ile Gly Lys

la fa

80 85 90

Thr Gly Pro Ile Gly Lys Lys Gly Asp Lys Gly Glu Lys Gly Leu 95 100 105

Leu Gly Ile Pro Gly Glu Lys Gly Lys Ala Gly Thr Val Cys Asp 110 115 120

Cys Gly Arg Tyr Arg Lys Phe Val Gly Gln Leu Asp Ile Ser Ile 125 130 135

Ala Arg Leu Lys Thr Ser Met Lys Phe Val Lys Asn Val Ile Ala 140 145 150

Gly Ile Arg Glu Thr Glu Glu Lys Phe Tyr Tyr Ile Val Gln Glu 155 160 165

Glu Lys Asn Tyr Arg Glu Ser Leu Thr His Cys Arg Ile Arg Gly
170 175 180

Gly Met Leu Ala Met Pro Lys Asp Glu Ala Ala Asn Thr Leu Ile 185 190 195

Ala Asp Tyr Val Ala Lys Ser Gly Phe Phe Arg Val Phe Ile Gly 200 205 210

Val Asn Asp Leu Glu Arg Glu Gly Gln Tyr Met Ser Thr Asp Asn 215 220 225

Thr Pro Leu Gln Asn Tyr Ser Asn Trp Asn Glu Gly Glu Pro Ser 230 235 240

Asp Pro Tyr Gly His Glu Asp Cys Val Glu Met Leu Ser Ser Gly 245 250 255

Arg Trp Asn Asp Thr Glu Cys His Leu Thr Met Tyr Phe Val Cys 260 265 270

Glu Phe Ile Lys Lys Lys Lys 275

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<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 99

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<212> DNA

<213> Artificial Sequence

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Met Phe Ala Ser Gly Trp Asn Gln Thr Val Pro Ile Glu Glu Ala 35 40 45

Gly Ser Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu 60

Pro Leu Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp 65 70 75

Leu Pro Ala Asp Leu Ala Phe Ala Val. Arg Ala Leu Cys Cys Lys 80 85 90

Arg Ala Leu Arg Ala Arg Ala Leu Ala Ala Ala Ala Asp Pro 95 100 105

Glu Gly Pro Glu Gly Gly Cys Ser Leu Ala Trp Arg Leu Ala Glu 110 115 120

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Arg Arg Phe Ser Tyr Ser Glu Ala Glu Arg Glu Ser Asn Arg Ala 140 145 150

Ala Arg Ala Phe Leu Arg Ala Leu Gly Trp Asp Trp Gly Pro Asp 155 160 165

Gly Gly Asp Ser Gly Glu Gly Ser Ala Gly Glu Gly Glu Arg Ala 170 175 180

Ala Pro Gly Ala Gly Asp Ala Ala Ala Gly Ser Gly Ala Glu Phe
185 190 195

Ala Gly Gly Asp Gly Ala Ala Arg Gly Gly Gly Ala Ala Ala Pro

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Phe	Leu	Glu	Ser	Leu 275	Glu	Pro	Asp	Leu	Pro 280	Ala	Leu	Arg	Ala	Met 285
Gly	Leu	His	Leu	Trp 290	Ala	Ala	Gly	Pro	Gly 295	Thr	His	Pro	Ala	Gly 300
Ile	Ser	Asp	Leu	Leu 305	Ala	Glu	Val	Ser	Ala 310	Glu	Val	Asp	Gly	Pro 315
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Gln	Phe	Trp	Glu	Asp 410		Gln	Gln	His	Arg 415	Val	Thr	Val	Phe	Gln 420
Tyr	Ile	Gly	Glu	Leu 425		Arg	Tyr	Leu	Val 430	Asn	Gln	Pro	Pro	Ser 435
Lys	Ala	Glu	Arg	Gly 440		Lys	val	Arg	Leu 445	Ala	Val	Gly	Ser	Gly 450
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Leu	Gln	Val	. Leu	Glu 470		Tyr	Gly	Leu	Thr 475	Glu	Gly	Asn	Val	Ala 480
Thr	: Ile	Asn	Tyr	Thr 485		Glr.	a Arg	Gly	Ala 490		Gly	Arc	Ala	Ser 495
Trp	Leu	Туг	: Lys	His	: Ile	Phe	e Pro	Phe	Ser	Let	ıle	e Arç	J Tyr	Asp

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Asp Ile Pro Tyr Gln Glu Ile Ala Gly Glu His Leu Arg Ile Cys
50 55 60

Pro Gln Glu Tyr Thr Cys Cys Thr Thr Glu Met Glu Asp Lys Leu 65 70 75

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Ser	His	Phe	Val	Arg 95	Thr	Thr	Phe	Val	Ser 100	Arg	His	Lys	Lys	Phe 105
Asp	Glu	Phe	Phe	Arg 110	Glu	Leu	Leu	Glu	Asn 115	Ala	Glu	Lys	Ser	Leu 120
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Ser	Glu	Val	Phe	Gln 140	Asp	Leu	Phe	Thr	Glu 145	Leu	Lys	Arg	Tyr	Tyr 150
Thr	Gly	Gly	Asn	Val 155	Asn	Leu	Glu	Glu	Met 160	Leu	Asn	Asp	Phe	Trp 165
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His	Phe	Ser	Glu	Asp 185	Tyr	Leu	Glu	Суз	Val 190	Ser	Lys	Tyr	Thr	Asp 195
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Val	Thr	Arg	Ala	Phe 215	Ile	Ala	Ala	Arg	Thr 220	Phe	Val	Gln	Gly	Leu 225
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Glu Cys Trp Asn Gly His Ser Lys Ala Arg Tyr Leu Pro Glu Ile 425 430 435
Met Asn Asp Gly Leu Thr Asn Gln Ile Asn Asn Pro Glu Val Asp 440 445 450
Val Asp Ile Thr Arg Pro Asp Thr Phe Ile Arg Gln Gln Ile Met 455 460 465
Ala Leu Arg Val Met Thr Asn Lys Leu Lys Asn Ala Tyr Asn Gly 470 475 480
Asn Asp Val Asn Phe Gln Asp Thr Ser Asp Glu Ser Ser Gly Ser 495
Gly Ser Gly Ser Gly Cys Met Asp Asp Val Cys Pro Thr Glu Phe 500 505 510
Glu Phe Val Thr Thr Glu Ala Pro Ala Val Asp Pro Asp Arg Arg 515 520 525
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Trp Gly Gln Ala Leu Glu Glu Glu Glu Glu Gly Ala Leu Leu Ala 50 55 60

Gln Ala Gly Glu Lys Leu Glu Pro Ser Thr Thr Ser Thr Ser Gln
65 70 75

Pro His Leu Ile Phe Ile Leu Ala Asp Asp Gln Gly Phe Arg Asp 80 85 90

Val Gly Tyr His Gly Ser Glu Ile Lys Thr Pro Thr Leu Asp Lys 95 100 105

Leu Ala Ala Glu Gly Val Lys Leu Glu Asn Tyr Tyr Val Gln Pro

				110					115					120
Ile	Cys	Thr	Pro	Ser 125	Arg	Ser	Gln	Phe	Ile 130	Thr	Gly	Lys	Tyr	Gln 135
Ile	His	Thr	Gly	Leu 140	Gln	His	Ser	Ile	Ile 145	Arg	Pro	Thr	Gln	Pro 150
Asn	Cys	Leu	Pro	Leu 155	Asp	Asn	Ala	Thr	Leu 160	Pro	Gln	Lys	Leu	Lys 165
Glu	Val	Gly	Tyr	Ser 170	Thr	His	Met	Val	Gly 175	Lys	Trp	His	Leu	Gly 180
Phe	Asn	Arg	Lys	Glu 185	Cys	Met	Pro	Thr	Arg 190	Arg	Gly	Phe	Asp	Thr 195
Phe	Phe	Gly	Ser	Leu 200	Leu	Gly	Ser	Gly	Asp 205	Tyr	Tyr	Thr	His	Tyr 210
Lys	Cys	Asp	Ser	Pro 215	Gly	Met	Cys	Gly	Tyr 220	Asp	Leu	Tyr	Glu	Asn 225
Asp	Asn	Ala	Ala	Trp 230	Asp	Tyr	Asp	Asn	Gly 235	Ile	Tyr	Ser	Thr	Gln 240
Met	Tyr	Thr	Gln	Arg 245	Val	Gln	Gln	Ile	Leu 250	Ala	Ser	His	Asn	Pro 255
Thr	Lys	Pro	Ile	Phe 260	Leu	Tyr	Thr	Ala	Tyr 265	Gln	Ala	Val	His	Ser 270
Pro	Leu	Gln	Ala	Pro 275	Gly	Arg	Tyr	Phe	Glu 280	His	Tyr	Arg	Ser	Ile 285
Ile	Asn	Ile	Asn	Arg 290	Arg	Arg	Tyr	Ala	Ala 295	Met	Leu	Ser	Cys	Leu 300
Asp	Glu	Ala	Ile	Asn 305	Asn	Val	Thr	Leu	Ala 310	Leu	Lys	Thr	Tyr	Gly 315
Phe	Tyr	Asn	Asn	Ser 320	Ile	Ile	Ile	Tyr	Ser 325	Ser	Asp	Asn	Gly	Gly 330
Gln	Pro	Thr	Ala	Gly 335	Gly	Ser	Asn	Trp	Pro 340		Arg	Gly	Ser	Lys 345
Gly	Thr	Tyr	Trp	Glu 350	Gly	Gly	Ile	Arg	Ala 355	Val	Gly	Phe	Val	His 360
Ser	Pro	Leu	Leu	Lys 365	Asn	Lys	Gly	Thr	Val 370	Cys	Lys	Glu	Leu	Val 375
His	Ile	Thr	Asp	Trp 380		Pro	Thr	Leu	Ile 385	Ser	Leu	Ala	Glu	Gly 390
Gln	Ile	Asp	Glu	Asp 395		Gln	Leu	Asp	Gly 400		Asp	Ile	Trp	Glu 405

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Thr Ile Ser Glu Gly Leu Arg Ser Pro Arg Val Asp Ile Leu His
                 410
                                      415
 Asn Ile Asp Pro Tyr Thr Pro Arg Gln Lys Met Ala Pro Gly Gln
                                      430
 Gln Ala Met Gly Ser Gly Thr Leu Gln Ser Ser Gln Pro Ser Glu
 Cys Ser Thr Gly Asn Cys Leu Gln Glu Ile Leu Ala Thr Ala Thr
 Gly Ser Pro Leu Ser Leu Ser Ala Thr Trp Asp Arg Thr Gly Gly
 Thr Met Asn Gly Ser Pro Cys Gln Leu Ala Lys Val Tyr Gly Phe
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 gggctcagga ggaggaagga ggacccgtgc gagaatgcct ctgccctgga 150
 geettgeget eeegetgetg eteteetggg tggeaggtgg tttegggaac 200
 geggecagtg caaggeatca egggttgtta geateggeae gteageetgg 250
 ggtctgtcac tatggaacta aactggcctg ctgctacggc tggagaagaa 300
 acagcaaggg agtctgtgaa gctacatgcg aacctggatg taagtttggt 350
 gagtgcgtgg gaccaaacaa atgcagatgc tttccaggat acaccgggaa 400
 aacctgcagt caagatgtga atgagtgtgg aatgaaaccc cggccatgcc 450
 aacacagatg tgtgaataca cacggaagct acaagtgctt ttgcctcagt 500
 ggccacatgc tcatgccaga tgctacgtgt gtgaactcta ggacatgtgc 550
 catgataaac tgtcagtaca gctgtgaaga cacagaagaa gggccacagt 600
 gcctgtgtcc atcctcagga ctccgcctgg ccccaaatgg aagagactgt 650
 ctagatattg atgaatgtgc ctctggtaaa gtcatctgtc cctacaatcg 700
 aagatgtgtg aacacatttg gaagctacta ctgcaaatgt cacattggtt 750
 tcgaactgca atatatcagt ggacgatatg actgtataga tataaatgaa 800
 tgtactatgg atagccatac gtgcagccac catgccaatt gcttcaatac 850
 ccaagggtcc ttcaagtgta aatgcaagca gggatataaa ggcaatggac 900
 ttcqqtqttc tqctatccct qaaaattctq tqaaqgaagt cctcagagca 950
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 catgaaaaag aaggcaaaaa ttaaaaatgt taccccagaa cccaccagga 1050
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ctcctacccc taaggtgaac ttgcagccct tcaactatga agagatagtt 1100 tccagaggcg ggaactctca tggaggtaaa aaagggaatg aagagaaatg 1150 aaagagggc ttgaggatga gaaaagagaa gagaaagccc tgaagaatga 1200 catagaggag cgaagcctgc gaggagatgt gtttttccct aaggtgaatg 1250 aagcaggtga attcggcctg attctggtcc aaaggaaagc gctaacttcc 1300 aaactggaac ataaagattt aaatatctcg gttgactgca gcttcaatca 1350 tgggatctgt gactggaaac aggatagaga agatgatttt gactggaatc 1400 ctgctgatcg agataatgct attggcttct atatggcagt tccggccttg 1450 gcaggtcaca agaaagacat tggccgattg aaacttctcc tacctgacct 1500 gcaaccccaa agcaacttct gtttgctctt tgattaccgg ctggccggag 1550 acaaagtcgg gaaacttcga gtgtttgtga aaaacagtaa caatgccctg 1600 qcatqqqaga agaccacgag tgaggatgaa aagtggaaga cagggaaaat 1650 tcagttgtat caaggaactg atgctaccaa aagcatcatt tttgaagcag 1700 aacgtggcaa gggcaaaacc ggcgaaatcg cagtggatgg cgtcttgctt 1750 gtttcaggct tatgtccaga tagcctttta tctgtggatg actgaatgtt 1800 actatcttta tatttgactt tgtatgtcag ttccctggtt tttttgatat 1850 tgcatcatag gacctctggc attttagaat tactagctga aaaattgtaa 1900 tgtaccaaca gaaatattat tgtaagatgc ctttcttgta taagatatgc 1950 caatatttgc tttaaatatc atatcactgt atcttctcag tcatttctga 2000 atctttccnc attatattat aaaatntgga aangtcagtt tatctcccct 2050 cctcngtata tctgatttgt atangtangt tgatgngctt ctctctacaa 2100 catttctaga aaatagaaaa aaaagcacag agaaatgttt aactgtttga 2150 ctcttatgat acttcttgga aactatgaca tcaaagatag acttttgcct 2200 aagtggctta gctgggtctt tcatagccaa acttgtatat ttaattcttt 2250 gtaataataa 2260

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<212> PRT

<213> Homo sapiens

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Phe Asn Tyr Glu Glu Ile Val Ser Arg Gly Gly Asn Ser His Gly 320 325 330

Gly Lys Lys Gly Asn Glu Glu Lys 335

<210> 120

<211> 22

<212> DNA

<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 121

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 122

<211> 50

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 122

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<210> 123

<211> 1199

<212> DNA

<213> Homo sapiens

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aagatatact tgttttgccc cttgacctga ccgacactgg ttcccatgaa 350 gcggctacca aagctgttct ccaggagttt ggtagaatcg acattctggt 400 caacaatggt ggaatgtccc agcgttctct gtgcatggat accagcttgg 450 atgtctacag aaagctaata gagcttaact acttagggac ggtgtccttg 500 acaaaatgtg ttctgcctca catgatcgag aggaagcaag gaaagattgt 550 tactgtgaat agcatcctgg gtatcatatc tgtacctctt tccattggat 600 actqtqctaq caaqcatqct ctccqqqqtt tttttaatqq ccttcqaaca 650 gaacttgcca catacccagg tataatagtt tctaacattt gcccaggacc 700 tqtqcaatca aatattqtqq agaattccct agctqqagaa gtcacaaaga 750 ctataggcaa taatggagac cagtcccaca agatgacaac cagtcgttgt 800 gtgcggctga tgttaatcag catggccaat gatttgaaag aagtttggat 850 ctcagaacaa cctttcttgt tagtaacata tttgtggcaa tacatgccaa 900 cctqqqcctg gtggataacc aacaagatgg ggaagaaaag gattgagaac 950 tttaagagtg gtgtggatgc agactettet tattttaaaa tetttaagac 1000 aaaacatgac tgaaaagagc acctgtactt ttcaagccac tggagggaga 1050 aatggaaaac atgaaaacag caatcttctt atgcttctga ataatcaaag 1100 actaatttgt gattttactt tttaatagat atgactttgc ttccaacatg 1150 gaatgaaata aaaaataaat aataaaagat tgccatgaat cttgcaaaa 1199

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<211> 289

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<213> Homo sapiens

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Ala Arg Arg Val His Glu Leu Glu Arg Val Lys Arg Arg Cys Leu 35 40 45

Glu Asn Gly Asn Leu Lys Glu Lys Asp Ile Leu Val Leu Pro Leu 50 55 60

Asp Leu Thr Asp Thr Gly Ser His Glu Ala Ala Thr Lys Ala Val 65 70 75

Leu Gln Glu Phe Gly Arg Ile Asp Ile Leu Val Asn Asn Gly Gly

80	85	90

Met Ser Gln Arg Ser Leu Cys Met Asp Thr Ser Leu Asp Val Tyr  $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105 \hspace{1.5cm}$ 

Arg Lys Leu Ile Glu Leu Asn Tyr Leu Gly Thr Val Ser Leu Thr 110 115 120

Lys Cys Val Leu Pro His Met Ile Glu Arg Lys Gln Gly Lys Ile 125 130 135

Val Thr Val Asn Ser Ile Leu Gly Ile Ile Ser Val Pro Leu Ser 140 145 150

Ile Gly Tyr Cys Ala Ser Lys His Ala Leu Arg Gly Phe Phe Asn 155 160 165

Gly Leu Arg Thr Glu Leu Ala Thr Tyr Pro Gly Ile Ile Val Ser 170 175 180

Asn Ile Cys Pro Gly Pro Val Gln Ser Asn Ile Val Glu Asn Ser 185 190 195

Leu Ala Gly Glu Val Thr Lys Thr Ile Gly Asn Asn Gly Asp Gln
200 205 210

Ser His Lys Met Thr Thr Ser Arg Cys Val Arg Leu Met Leu Ile 215 220 225

Ser Met Ala Asn Asp Leu Lys Glu Val Trp Ile Ser Glu Gln Pro  $230 \hspace{1.5cm} 235 \hspace{1.5cm} 240 \hspace{1.5cm}$ 

Phe Leu Leu Val Thr Tyr Leu Trp Gln Tyr Met Pro Thr Trp Ala 245 250 255

Trp Trp Ile Thr Asn Lys Met Gly Lys Lys Arg Ile Glu Asn Phe 260 265 270

Lys Ser Gly Val Asp Ala Asp Ser Ser Tyr Phe Lys Ile Phe Lys 275 280 285

Thr Lys His Asp

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<210> 126

<211> 19

<212> DNA

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<400> 126
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<210> 127
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<212> DNA
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<220>
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<400> 127
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<213> Homo sapiens
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<211> 571

<212> PRT

<213> Homo sapiens

<400> 132

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Ala Trp Ile Leu Phe Phe Val Leu Tyr Asp Phe Cys Ile Val Cys  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Ile Thr Thr Tyr Ala Ile Asn Val Ser Leu Met Trp Leu Ser Phe 35 40 45

Arg Lys Val Gln Glu Pro Gln Gly Lys Ala Lys Arg His Gly Asn
50 55 60

Thr Val Pro Gly Glu Trp Pro Trp Gln Ala Ser Val Arg Arg Gln 65 70 75

Gly	Ala	His	Ile	Cys 80	Ser	Gly	Ser	Leu	Val 85	Ala	Asp	Thr	Trp	Val 90
Leu	Thr	Ala	Ala	His 95	Cys	Phe	Glu	Lys	Ala 100	Ala	Ala	Thr	Glu	Leu 105
Asn	Ser	Trp	Ser	Val 110	Val	Leu	Gly	Ser	Leu 115	Gln	Arg	Glu	Gly	Leu 120
Ser	Pro	Gly	Ala	Glu 125	Glu	Val	Gly	Val	Ala 130	Ala	Leu	Gln	Leu	Pro 135
Arg	Ala	Tyr	Asn	His 140	Tyr	Ser	Gln	Gly	Ser 145	Asp	Leu	Ala	Leu	Leu 150
Gln	Leu	Ala	His	Pro 155	Thr	Thr	His	Thr	Pro 160	Leu	Cys	Leu	Pro	Gln 165
Pro	Ala	His	Arg	Phe 170	Pro	Phe	Gly	Ala	Ser 175	Cys	Trp	Ala	Thr	Gly 180
Trp	Asp	Gln	Asp	Thr 185	Ser	Asp	Ala	Pro	Gly 190	Thr	Leu	Arg	Asn	Leu 195
Arg	Leu	Arg	Leu	Ile 200	Ser	Arg	Pro	Thr	Cys 205	Asn	Cys	Ile	Tyr	Asn 210
Gln	Leu	His	Gln	Arg 215	His	Leu	Ser	Asn	Pro 220	Ala	Arg	Pro	Gly	Met 225
Leu	Cys	Gly	Gly	Pro 230	Gln	Pro	Gly	Val	Gln 235	Gly	Pro	Cys	Gln	Gly 240
Asp	Ser	Gly	Gly	Pro 245	Val	Leu	Cys	Leu	Glu 250	Pro	Asp	Gly	His	Trp 255
Val	Gln	Ala	Gly	Ile 260	Ile	Ser	Phe	Ala	Ser 265	Ser	Cys	Ala	Gln	Glu 270
Asp	Ala	Pro	Val	Leu 275		Thr	Asn	Thr	Ala 280		His	Ser	Ser	Trp 285
Leu	Gln	Ala	Arg	Val 290		Gly	Ala	Ala	Phe 295		Ala	Gln	Ser	Pro 300
Glu	Thr	Pro	Glu	Met 305		Asp	Glu	Asp	Ser 310	Суз	Val	Ala	. Cys	Gly 315
Ser	Leu	Arg	Thr	Ala 320		Pro	Gln	Ala	Gly 325	Ala	Pro	Ser	Pro	Trp 330
Pro	Trp	Glu	Ala	Arg 335		Met	His	Gln	Gly 340		Leu	Ala	Cys	Gly 345
Gly	Ala	Leu	Val	Ser 350		Glu	Ala	. Val	Leu 355	Thr	Ala	a Ala	His	Cys 360
Phe	Ile	Gly	Arg	Gln	Ala	Pro	Glu	Glu	Trp	Ser	Val	. Gly	Leu	Gly

				365					370					375
Thr	Arg	Pro	Glu	Glu 380	Trp	Gly	Leu	Lys	Gln 385	Leu	Ile	Leu	His	Gly 390
Ala	Tyr	Thr	His	Pro 395	Glu	Gly	Gly	Tyr	Asp 400	Met	Ala	Leu	Leu	Leu 405
Leu	Ala	Gln	Pro	Val 410	Thr	Leu	Gly	Ala	Ser 415	Leu	Arg	Pro	Leu	Cys 420
Leu	Pro	Tyr	Pro	Asp 425	His	His	Leu	Pro	Asp 430	Gly	Glu	Arg	Gly	Trp 435
Val	Leu	Gly	Arg	Ala 440	Arg	Pro	Gly	Ala	Gly 445	Ile	Ser	Ser	Leu	Gln 450
Thr	Val	Pro	Val	Thr 455	Leu	Leu	Gly	Pro	Arg 460	Ala	Суѕ	Ser	Arg	Leu 465
His	Ala	Ala	Pro	Gly 470	Gly	Asp	Gly	Ser	Pro 475	Ile	Leu	Pro	Gly	Met 480
Val	Cys	Thr	Ser	Ala 485	Val	Gly	Glu	Leu	Pro 490	Ser	Cys	Glu	Gly	Leu 495
Ser	Gly	Ala	Pro	Leu 500	Val	His	Glu	Val	Arg 505	Gly	Thr	Trp	Phe	Leu 510
Ala	Gly	Leu	His	Ser 515	Phe	Gly	Asp	Ala	Cys 520	Gln	Gly	Pro	Ala	Arg 525
Pro	Ala	Val	Phe	Thr 530	Ala	Leu	Pro	Ala	Tyr 535	Glu	Asp	Trp	Val	Ser 540
Ser	Leu	. Asp	Trp	Gln 545	Val	Tyr	Phe	Ala	Glu 550	Glu	Pro	Glu	Pro	Glu 555
Ala	Glu	Pro	Gly	Ser 560		Leu	Ala	Asn	Ile 565	Ser	Gln	Pro	Thr	Ser 570
Cys	:													
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<213> Homo sapiens
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 gatgctgcgt cggcggggca gccctggcat gggtgtgcat gtgggtgcag 200
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 cctgaagacc cagtggtggc actggtgggc accgatgcca ccctgtgctg 300
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 cctacagctg cctggtgcgc aaccccgtgc tgcagcagga tgcgcacrgc 850
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<210> 137
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<sup>&</sup>lt;211> 316

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;220>

<sup>&</sup>lt;221> unsure

<sup>&</sup>lt;222> 233

<sup>&</sup>lt;223> unknown amino acid

<sup>&</sup>lt;400> 137

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Val	Gln	Val	Pro	Glu 35	Asp	Pro	Val	Val	Ala 40	Leu	Val	Gly	Thr	Asp 45
Ala	Thr	Leu	Cys	Cys 50	Ser	Phe	Ser	Pro	Glu 55	Pro	Gly	Phe	Ser	Leu 60
Ala	Gln	Leu	Asn	Leu 65	Ile	Trp	Gln	Leu	Thr 70	Asp	Thr	Lys	Gln	Leu 75
Val	His	Ser	Phe	Ala 80	Glu	Gly	Gln	Asp	Gln 85	Gly	Ser	Ala	Tyr	Ala 90
Asn	Arg	Thr	Ala	Leu 95	Phe	Pro	Asp	Leu	Leu 100	Ala	Gln	Gly	Asn	Ala 105
Ser	Leu	Arg	Leu	Gln 110	Arg	Val	Arg	Val	Ala 115	Asp	Glu	Gly	Ser	Phe 120
Thr	Cys	Phe	Val	Ser 125	Ile	Arg	Asp	Phe	Gly 130	Ser	Ala	Ala	Val	Ser 135
Leu	Gln	Val	Ala	Ala 140	Pro	Tyr	Ser	Lys	Pro 145	Ser	Met	Thr	Leu	Glu 150
Pro	Asn	Lys	Asp	Leu 155	Arg	Pro	Gly	Asp	Thr 160	Val	Thr	Ile	Thr	Cys 165
Ser	Ser	Tyr	Gln	Gly 170	Tyr	Pro	Glu	Ala	Glu 175	Val	Phe	Trp	Gln	Asp 180
Gly	Gln	Gly	Val	Pro 185		Thr	Gly	Asn	Val 190	Thr	Thr	Ser	Gln	Met 195
Ala	Asn	Glu	Gln	Gly 200		Phe	Asp	Val	His 205	Ser	Val	Leu	Arg	Val 210
Val	Leu	Gly	Ala	Asn 215	Gly	Thr	: Туг	: Ser	Cys 220	Leu	Val	Arg	Asn	Pro 225
Val	Leu	Gln	Gln	Asp 230		. His	: Xaa	ser	235	Thr	Ile	Thr	Gly	Glr. 240
Pro	Met	Thr	Phe	Pro 245		Glu	ı Ala	Leu	250	Val	Thr	· Val	Gly	255
Ser	Val	. Cys	Leu	11e 260		Let	ı Leı	ı Val	Ala 265	Leu	Ala	Phe	· Val	. Cys 270
Trp	Arg	l Lys	Ile	Lys 275		ser	c Cys	s Glu	1 Glu 280	ı Glu	Asn	n Ala	Gly	7 Ala 285
Glu	Asp	Gln	Asp	Gly 290		ı Gly	/ Gl	ı Gl	y Ser 295	Lys S	Thr	Ala	l Lei	300

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<213> Homo sapiens
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<223> unknown base
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 ttgactctgt tcgtcacttc tttgattggg gctttgatcc ctgaaccaga 250
 agtgaaaatt gaagttctcc agaagccatt catctgccat cgcaagacca 300
 aaggagggga tttgatgttg gtccactatg aaggctactt agaaaaggac 350
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 gtttaccctg ggcatcctgg aggctctcaa aggttgggac cagggcttga 450
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 gagttataga qatacatcta cccttttaat ataqcactca tctttcaaga 850
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<211> 211

<212> PRT

<213> Homo sapiens

<400> 145

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20 25 30

Val Leu Gln Lys Pro Phe Ile Cys His Arg Lys Thr Lys Gly Gly 35 40 45

Asp Leu Met Leu Val His Tyr Glu Gly Tyr Leu Glu Lys Asp Gly
50 55 60

Ser Leu Phe His Ser Thr His Lys His Asn Asn Gly Gln Pro Ile 65 70 75

Trp Phe Thr Leu Gly Ile Leu Glu Ala Leu Lys Gly Trp Asp Gln 80 85 90

Gly Leu Lys Gly Met Cys Val Gly Glu Lys Arg Lys Leu Ile Ile 95 100 105

Pro Pro Ala Leu Gly Tyr Gly Lys Glu Gly Lys Gly Lys Ile Pro 110 115

Pro Glu Ser Thr Leu Ile Phe Asn Ile Asp Leu Leu Glu Ile Arg 125 130 135

Asn Gly Pro Arg Ser His Glu Ser Phe Gln Glu Met Asp Leu Asn 140 145

Asp Asp Trp Lys Leu Ser Lys Asp Glu Val Lys Ala Tyr Leu Lys

Lys Glu Phe Glu Lys His Gly Ala Val Val Asn Glu Ser His His 170 175 180

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Asp Gly Phe Ile Ser Ala Arg Glu Phe Thr Tyr Lys His Asp Glu 200 205 210

Leu

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<211> 26

<212> DNA

<213> Artificial Sequence

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<220>
<223> Synthetic oligonucleotide probe
<400> 147
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<211> 49
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
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<211> 2196
<212> DNA
<213> Homo sapiens
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<210> 150

<211> 215

<212> PRT

<213> Homo sapiens

<400> 150

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Glu Val Thr Val Pro Ala Thr Leu Asn Val Leu Asn Gly Ser Asp
35 40 45

Ala Arg Leu Pro Cys Thr Phe Asn Ser Cys Tyr Thr Val Asn His
50 55 60

Lys Gln Phe Ser Leu Asn Trp Thr Tyr Gln Glu Cys Asn Asn Cys
65 70 75

Ser Glu Glu Met Phe Leu Gln Phe Arg Met Lys Ile Ile Asn Leu 80 85 90

Lys Leu Glu Arg Phe Gln Asp Arg Val Glu Phe Ser Gly Asn Pro 95 100 105

Ser Lys Tyr Asp Val Ser Val Met Leu Arg Asn Val Gln Pro Glu 110 115 120

Asp Glu Gly Ile Tyr Asn Cys Tyr Ile Met Asn Pro Pro Asp Arg 125 130 135

His Arg Gly His Gly Lys Ile His Leu Gln Val Leu Met Glu Glu
140 145 150

Pro Pro Glu Arg Asp Ser Thr Val Ala Val Ile Val Gly Ala Ser 155 160 165

Val Gly Gly Phe Leu Ala Val Val Ile Leu Val Leu Met Val Val 170 175 180

Lys Cys Val Arg Arg Lys Lys Glu Gln Lys Leu Ser Thr Asp Asp 185 190 195

Leu Lys Thr Glu Glu Glu Gly Lys Thr Asp Gly Glu Gly Asn Pro  $200 \hspace{1cm} 205 \hspace{1cm} 210 \hspace{1cm}$ 

Asp Asp Gly Ala Lys 215

<210> 151

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<213> Homo sapiens
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<222> 103, 233
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<213> Homo sapiens
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<211> 2680
<212> DNA
<213> Homo sapiens
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<213> Artificial

<400> 157

Met Gly Leu His Leu Arg Pro Tyr Arg Val Gly Leu Leu Pro Asp 1 5 10 15

Gly Leu Leu Phe Leu Leu Leu Leu Met Leu Leu Ala Asp Pro 20 25 30

Ala Leu Pro Ala Gly Arg His Pro Pro Val Val Leu Val Pro Gly 35 40 45

Asp Leu Gly Asn Gln Leu Glu Ala Lys Leu Asp Lys Pro Thr Val
50 55 60

Val His Tyr Leu Cys Ser Lys Lys Thr Glu Ser Tyr Phe Thr Ile 65 70 75

Trp Leu Asn Leu Glu Leu Leu Pro Val Ile Ile Asp Cys Trp 80 85 90

Ile Asp Asn Ile Arg Leu Val Tyr Asn Lys Thr Ser Arg Ala Thr  $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105$ 

Gln Phe Pro Asp Gly Val Asp Val Arg Val Pro Gly Phe Gly Lys

				110					115					120
Thr	Phe	Ser	Leu	Glu 125	Phe	Leu	Asp	Pro	Ser 130	Lys	Ser	Ser	Val	Gly 135
Ser	Tyr	Phe	His	Thr 140	Met	Val	Glu	Ser	Leu 145	Val	Gly	Trp	Gly	Tyr 150
Thr	Arg	Gly	Glu	Asp 155	Val	Arg	Gly	Ala	Pro 160	Tyr	Asp	Trp	Arg	Arg 165
Ala	Pro	Asn	Glu	Asn 170	Gly	Pro	Tyr	Phe	Leu 175	Ala	Leu	Arg	Glu	Met 180
Ile	Glu	Glu	Met	Tyr 185	Gln	Leu	Tyr	Gly	Gly 190	Pro	Val	Val	Leu	Val 195
Ala	His	Ser	Met	Gly 200	Asn	Met	Tyr	Thr	Leu 205	Tyr	Phe	Leu	Gln	Arg 210
Gln	Pro	Gln	Ala	Trp 215	Lys	Asp	Lys	Tyr	Ile 220	Arg	Ala	Phe	Val	Ser 225
Leu	Gly	Ala	Pro	Trp 230	Gly	Gly	Val	Ala	Lys 235	Thr	Leu	Arg	Val	Leu 240
Ala	Ser	Gly	Asp	Asn 245	Asn	Arg	Ile	Pro	Val 250	Ile	Gly	Pro	Leu	Lys 255
Ile	Arg	Glu	Gln	Gln 260	Arg	Ser	Ala	Val	Ser 265	Thr	Ser	Trp	Leu	Leu 270
Pro	Tyr	Asn	Tyr	Thr 275	Trp	Ser	Pro	Glu	Lys 280	Val	Phe	Val	Gln	Thr 285
Pro	Thr	Ile	Asn	Tyr 290	Thr	Leu	Arg	Asp	Tyr 295	Arg	Lys	Phe	Phe	Gln 300
Asp	Ile	Gly	Phe	Glu 305	Asp	Gly	Trp	Leu	Met 310	Arg	Gln	Asp	Thr	Glu 315
Gly	Leu	Val	Glu	Ala 320	Thr	Met	Pro	Pro	Gly 325	Val	Gln	Leu	His	Cys 330
Leu	Tyr	Gly	Thr	Gly 335	Val	Pro	Thr	Pro	Asp 340	Ser	Phe	Tyr	Tyr	Glu 345
Ser	Phe	Pro	Asp	Arg 350	Asp	Pro	Lys	Ile	Cys 355	Phe	Gly	Asp	Gly	Asp 360
Gly	Thr	Val	Asn	Leu 365	Lys	Ser	Ala	Leu	Gln 370	Cys	Gln	Ala	Trp	Gln 375
Ser	Arg	Gln	Glu	His 380	Gln	Val	Leu	Leu	Gln 385	Glu	Leu	Pro	Gly	Ser 390
Glu	His	Ile	Glu	Met 395	Leu	Ala	Asn	Ala	Thr 400	Thr	Leu	Ala	Tyr	Leu 405

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<210> 158
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<211> 24
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<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 159
ggtgccgctg cagaaagtag agcg 24
<210> 160
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 160
gccccaaatg aaaacgggcc ctacttcctg gccctccgcg agatg 45
<210> 161
<211> 1512
<212> DNA
<213> Homo sapiens
<400> 161
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gcggcgcttc ctgacgcagc cgcaggtggt ggcgcgccc gtgtgcttgg 150
tcttcgcctt gatcgtgttc tcctgcatct atggtgaggg ctacagcaat 200
gcccacgagt ctaagcagat gtactgcgtg ttcaaccgca acgaggatgc 250
ctgccgctat ggcagtgcca tcggggtgct qqccttcctq qcctcqqcct 300
tcttcttggt ggtcgacgcg tatttccccc agatcagcaa cgccactgac 350
cgcaagtacc tggtcattgg tgacctgctc ttctcagctc tctggacctt 400
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ttcagcttct tttccatctt ctcctggggt gtgctggcct ccctggccta 550
ccagogctac aaggctggcg tggacgactt catccagaat tacgttgacc 600
ccactccgga ccccaacact gcctacgcct cctacccagg tgcatctgtg 650
gacaactacc aacagccacc cttcacccag aacgcggaga ccaccgaggg 700
ctaccagccg cccctgtgt actgagtggc ggttagcgtg ggaaggggga 750
cagagaggc cctccctct gccctggact ttcccatcag cctcctggaa 800
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cctgtgccca gagggcttca gtcagccgct cactcctcca gggcactttt 950
aggaaagggt ttttagctag tgtttttcct cqcttttaat qacctcaqcc 1000
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gtgccccatg gctcccagac tctgtctgtg ccgagtgtat tataaaatcg 1450
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tctcattcaa ag 1512
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<210> 162

<211> 224

<212> PRT

<213> Homo sapiens

<400> 162

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Asp Leu Arg Arg Phe Leu Thr Gln Pro Gln Val Val Ala Arg Ala 20 25 30

```
Val Cys Leu Val Phe Ala Leu Ile Val Phe Ser Cys Ile Tyr Gly
 Glu Gly Tyr Ser Asn Ala His Glu Ser Lys Gln Met Tyr Cys Val
 Phe Asn Arg Asn Glu Asp Ala Cys Arg Tyr Gly Ser Ala Ile Gly
 Val Leu Ala Phe Leu Ala Ser Ala Phe Phe Leu Val Val Asp Ala
 Tyr Phe Pro Gln Ile Ser Asn Ala Thr Asp Arg Lys Tyr Leu Val
                                      100
 Ile Gly Asp Leu Leu Phe Ser Ala Leu Trp Thr Phe Leu Trp Phe
                 110
                                      115
 Val Gly Phe Cys Phe Leu Thr Asn Gln Trp Ala Val Thr Asn Pro
 Lys Asp Val Leu Val Gly Ala Asp Ser Val Arg Ala Ala Ile Thr
                                     145
 Phe Ser Phe Phe Ser Ile Phe Ser Trp Gly Val Leu Ala Ser Leu
 Ala Tyr Gln Arg Tyr Lys Ala Gly Val Asp Asp Phe Ile Gln Asn
                 170
                                     175
 Tyr Val Asp Pro Thr Pro Asp Pro Asn Thr Ala Tyr Ala Ser Tyr
                                     190
 Pro Gly Ala Ser Val Asp Asn Tyr Gln Gln Pro Pro Phe Thr Gln
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                                                          210
 Asn Ala Glu Thr Thr Glu Gly Tyr Gln Pro Pro Pro Val Tyr
<211> 24
<213> Artificial Sequence
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- <210> 163
- <212> DNA

- <223> Synthetic oligonucleotide probe
- <400> 163
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- <210> 164
- <211> 20
- <212> DNA
- <213> Artificial Sequence
- <223> Synthetic oligonucleotide probe

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<400> 164
gtgtactgag cggcggttag 20
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<400> 165
ctgaaggtga tggctgccct cac 23
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<212> DNA
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<400> 166
ccaggaggct catgggaaag tcc 23
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<212> DNA
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<223> Synthetic oligonucleotide probe
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<210> 168
<211> 3143
<212> DNA
<213> Homo sapiens
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 atqttcaagg cctgtgagga ctccaagaga aaagcccggg gctacctccg 200
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 gggtgctact ctggtatttc ctagggtaca aggcggaggt gatggtcagc 300
 caggtgtact caggcagtct gcgtgtactc aatcgccact tctcccagga 350
 tottaccego ogggaatota gtgccttccg cagtgaaacc gccaaagccc 400
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<sup>&</sup>lt;210> 169

<sup>&</sup>lt;211> 802

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 169

Met Pro Val Ala Glu Ala Pro Gln Val Ala Gly Gly Gln Gly Asp Gly Gly Asp Gly Glu Glu Ala Glu Pro Glu Gly Met Phe Lys Ala Cys Glu Asp Ser Lys Arg Lys Ala Arg Gly Tyr Leu Arg Leu Val Pro Leu Phe Val Leu Leu Ala Leu Leu Val Leu Ala Ser Ala Gly Val Leu Leu Trp Tyr Phe Leu Gly Tyr Lys Ala Glu Val Met Val Ser Gln Val Tyr Ser Gly Ser Leu Arg Val Leu Asn Arg His Phe Ser Gln Asp Leu Thr Arg Arg Glu Ser Ser Ala Phe Arg Ser Glu Thr Ala Lys Ala Gln Lys Met Leu Lys Glu Leu Ile Thr Ser Thr 115 120 Arg Leu Gly Thr Tyr Tyr Asn Ser Ser Ser Val Tyr Ser Phe Gly Glu Gly Pro Leu Thr Cys Phe Phe Trp Phe Ile Leu Gln Ile Pro 150 145 Glu His Arg Arg Leu Met Leu Ser Pro Glu Val Val Gln Ala Leu 155 160 Leu Val Glu Glu Leu Leu Ser Thr Val Asn Ser Ser Ala Ala Val 170 180 175 Pro Tyr Arg Ala Glu Tyr Glu Val Asp Pro Glu Gly Leu Val Ile Leu Glu Ala Ser Val Lys Asp Ile Ala Ala Leu Asn Ser Thr Leu 205 Gly Cys Tyr Arg Tyr Ser Tyr Val Gly Gln Gly Gln Val Leu Arg Leu Lys Gly Pro Asp His Leu Ala Ser Ser Cys Leu Trp His Leu 230 235 Gln Gly Pro Lys Asp Leu Met Leu Lys Leu Arg Leu Glu Trp Thr Leu Ala Glu Cys Arg Asp Arg Leu Ala Met Tyr Asp Val Ala Gly Pro Leu Glu Lys Arg Leu Ile Thr Ser Val Tyr Gly Cys Ser Arg Gln Glu Pro Val Val Glu Val Leu Ala Ser Gly Ala Ile Met Ala

				290					295					300
Val	Val	Trp	Lys	Lys 305	Gly	Leu	His	Ser	Tyr 310	Tyr	Asp	Pro	Phe	Val 315
Leu	Ser	Val	Gln	Pro 320	Val	Val	Phe	Gln	Ala 325	Cys	Glu	Val	Asn	Leu 330
Thr	Leu	Asp	Asn	Arg 335	Leu	Asp	Ser	Gln	Gly 340	Val	Leu	Ser	Thr	Pro 345
Tyr	Phe	Pro	Ser	Tyr 350	Tyr	Ser	Pro	Gln	Thr 355	His	Cys	Ser	Trp	His 360
Leu	Thr	Val	Pro	Ser 365	Leu	Asp	Tyr	Gly	Leu 370	Ala	Leu	Trp	Phe	Asp 375
Ala	Tyr	Ala	Leu	Arg 380	Arg	Gln	Lys	Tyr	Asp 385	Leu	Pro	Cys	Thr	Gln 390
Gly	Gln	Trp	Thr	Ile 395	Gln	Asn	Arg	Arg	Leu 400	Cys	Gly	Leu	Arg	Ile 405
Leu	Gln	Pro	Tyr	Ala 410	Glu	Arg	Ile	Pro	Val 415	Val	Ala	Thr	Ala	Gly 420
Ile	Thr	Ile	Asn	Phe 425	Thr	Ser	Gln	Ile	Ser 430	Leu	Thr	Gly	Pro	Gly 435
Val	Arg	Val	His	Tyr 440	Gly	Leu	Tyr	Asn	Gln 445	Ser	Asp	Pro	Cys	Pro 450
Gly	Glu	Phe	Leu	Cys 455	Ser	Val	Asn	Gly	Leu 460	Cys	Val	Pro	Ala	Cys 465
Asp	Gly	Val	Lys	Asp 470	Cys	Pro	Asn	Gly	Leu 475	Asp	Glu	Arg	Asn	Cys 480
Val	Cys	Arg	Ala	Thr 485	Phe	Gln	Суз	Lys	Glu 490	Asp	Ser	Thr	Cys	Ile 495
Ser	Leu	Pro	Lys	Val 500	Суѕ	Asp	Gly	Gln	Pro 505	Asp	Cys	Leu	Asn	Gly 510
Ser	Asp	Glu	Glu	Gln 515	Cys	Gln	Glu	Gly	Val 520	Pro	Cys	Gly	Thr	Phe 525
Thr	Phe	Gln	Cys	Glu 530	Asp	Arg	Ser	Суз	Val 535	Lys	Lys	Pro	Asn	Pro 540
Gln	Cys	Asp	Gly	Arg 545	Pro	Asp	Cys	Arg	Asp 550	Gly	Ser	Asp	Glu	Glu 555
His	Cys	Asp	Cys	Gly 560	Leu	Gln	Gly	Pro	Ser 565	Ser	Arg	Ile	Val	Gly 570
Gly	Ala	Val	Ser	Ser 575	Glu	Gly	Glu	Trp	Pro 580	Trp	Gln	Ala	Ser	Leu 585

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Gln Val Arg Gly Arg His Ile Cys Gly Gly Ala Leu Ile Ala Asp
Arg Trp Val Ile Thr Ala Ala His Cys Phe Gln Glu Asp Ser Met
                605
                                     610
                                                         615
Ala Ser Thr Val Leu Trp Thr Val Phe Leu Gly Lys Val Trp Gln
                620
Asn Ser Arg Trp Pro Gly Glu Val Ser Phe Lys Val Ser Arg Leu
                                     640
Leu Leu His Pro Tyr His Glu Glu Asp Ser His Asp Tyr Asp Val
                                     655
Ala Leu Leu Gln Leu Asp His Pro Val Val Arg Ser Ala Ala Val
                665
                                     670
                                                         675
Arg Pro Val Cys Leu Pro Ala Arg Ser His Phe Phe Glu Pro Gly
                680
                                     685
Leu His Cys Trp Ile Thr Gly Trp Gly Ala Leu Arg Glu Gly Gly
                695
                                     700
Pro Ile Ser Asn Ala Leu Gln Lys Val Asp Val Gln Leu Ile Pro
                                     715
Gln Asp Leu Cys Ser Glu Ala Tyr Arg Tyr Gln Val Thr Pro Arg
                                     730
Met Leu Cys Ala Gly Tyr Arg Lys Gly Lys Lys Asp Ala Cys Gln
                                     745
Gly Asp Ser Gly Gly Pro Leu Val Cys Lys Ala Leu Ser Gly Arg
Trp Phe Leu Ala Gly Leu Val Ser Trp Gly Leu Gly Cys Gly Arg
Pro Asn Tyr Phe Gly Val Tyr Thr Arg Ile Thr Gly Val Ile Ser
Trp Ile Gln Gln Val Val Thr
                800
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<210> 170

<211> 1327

<212> DNA

<213> Homo sapiens

<400> 170

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gcaaagagga cagcacatgc atctcactgc ccaaggtctg tgatgggcag 350
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<211> 354

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Lys Pro Ser Val Arg Phe Asn Leu Arg Thr Ser Lys Asp Pro Glu
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His Glu Gly Cys Tyr Leu Ser Val Gly His Ser Gln Pro Leu Glu
65 70 75

Asp Cys Ser Phe Asn Met Thr Ala Lys Thr Phe Phe Ile Ile His  $80 \hspace{1cm} 85 \hspace{1cm} 90$ 

Gly Trp Thr Met Ser Gly Ile Phe Glu Asn Trp Leu His Lys Leu 95 100 105

Val Ser Ala Leu His Thr Arg Glu Lys Asp Ala Asn Val Val 110 115 120

Val Asp Trp Leu Pro Leu Ala His Gln Leu Tyr Thr Asp Ala Val 125 130 135

Asn Asn Thr Arg Val Val Gly His Ser Ile Ala Arg Met Leu Asp 140 145 150

Trp Leu Gln Glu Lys Asp Asp Phe Ser Leu Gly Asn Val His Leu 155 160 165

Ile Gly Tyr Ser Leu Gly Ala His Val Ala Gly Tyr Ala Gly Asn 170 175 180

Phe Val Lys Gly Thr Val Gly Arg Ile Thr Gly Leu Asp Pro Ala 185 190 195

Gly Pro Met Phe Glu Gly Ala Asp Ile His Lys Arg Leu Ser Pro 200 205 210

Asp Asp Ala Asp Phe Val Asp Val Leu His Thr Tyr Thr Arg Ser 215 220 225

Phe Gly Leu Ser Ile Gly Ile Gln Met Pro Val Gly His Ile Asp 230 235 240

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 Lys Cys Glu His Glu Arg Ala Val His Leu Phe Val Asp Ser Leu
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                                     295
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 Cys Asn Ser Ile Gly Tyr Asn Ala Lys Lys Met Arg Asn Lys Arg
Asn Ser Lys Met Tyr Leu Lys Thr Arg Ala Gly Met Pro Phe Arg
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<212> PRT

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Pro Pro Ala Val Leu Leu Glu Val Gln Gly Thr Leu Gln Arg Pro 35 40 45

Leu Val Arg Asp Ser Arg Thr Ser Pro Ala Asn Cys Thr Trp Leu
50 55 60

Ile Leu Gly Ser Lys Glu Gln Thr Val Thr Ile Arg Phe Gln Lys
65 70 75

Leu His Leu Ala Cys Gly Ser Glu Arg Leu Thr Leu Arg Ser Pro 80 85 90

Leu Gln Pro Leu Ile Ser Leu Cys Glu Ala Pro Pro Ser Pro Leu 95 100 105

Gln Leu Pro Gly Gly Asn Val Thr Ile Thr Tyr Ser Tyr Ala Gly
110 115 120

Ala Arg Ala Pro Met Gly Gln Gly Phe Leu Leu Ser Tyr Ser Gln 125 130 135

Asp Trp Leu Met Cys Leu Gln Glu Glu Phe Gln Cys Leu Asn His 140 145 150

Arg Cys Val Ser Ala Val Gln Arg Cys Asp Gly Val Asp Ala Cys 155 160

Gly Asp Gly Ser Asp Glu Ala Gly Cys Ser Ser Asp Pro Phe Pro

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Leu	Glu	Asp	Phe	Tyr 200	Gly	Val	Phe	Ser	Ser 205	Pro	Gly	Tyr	Thr	His 210
Leu	Ala	Ser	Val	Ser 215	His	Pro	Gln	Ser	Cys 220	His	Trp	Leu	Leu	Asp 225
Pro	His	Asp	Gly	Arg 230	Arg	Leu	Ala	Val	Arg 235	Phe	Thr	Ala	Leu	Asp 240
Leu	Gly	Phe	Gly	Asp 245	Ala	Val	His	Val	Tyr 250	Asp	Gly	Pro	Gly	Pro 255
Pro	Glu	Ser	Ser	Arg 260	Leu	Leu	Arg	Ser	Leu 265	Thr	His	Phe	Ser	Asn 270
Gly	Lys	Ala	Val	Thr 275	Val	Glu	Thr	Leu	Ser 280	Gly	Gln	Ala	Val	Val 285
Ser	Tyr	His	Thr	Val 290	Ala	Trp	Ser	Asn	Gly 295	Arg	Gly	Phe	Asn	Ala 300
Thr	Tyr	His	Val	Arg 305	Gly	Tyr	Суз	Leu	Pro 310	Trp	Asp	Arg	Pro	Cys 315
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Cys	Tyr	Ser	Glu	Ala 335	Gln	Arg	Суз	Asp	Gly 340	Ser	Trp	Asp	Cys	Ala 345
Asp	Gly	Thr	Asp	Glu 350	Glu	Asp	Cys	Pro	Gly 355	Cys	Pro	Pro	Gly	His 360
Phe	Pro	Cys	Gly	Ala 365	Ala	Gly	Thr	Ser	Gly 370	Ala	Thr	Ala	Cys	Tyr 375
Leu	Pro	Ala	Asp	Arg 380	Cys	Asn	Tyr	Gln	Thr 385	Phe	Cys	Ala	Asp	Gly 390
Ala	Asp	Glu	Arg	Arg 395	Cys	Arg	His	Cys	Gln 400	Pro	Gly	Asn	Phe	Arg 405
Cys	Arg	Asp	Glu	Lys 410	Cys	Val	Tyr	Glu	Thr 415	Trp	Val	Cys	Asp	Gly 420
Gln	Pro	Asp	Cys	Ala 425	Asp	Gly	Ser	Asp	Glu 430	Trp	Asp	Cys	Ser	Tyr 435
Val	Leu	Pro	Arg	Lys 440	Val	Ile	Thr	Ala	Ala 445	Val	Ile	Gly	Ser	Leu 450
Val	Cys	Gly	Leu	Leu 455	Leu	Val	Ile	Ala	Leu 460	Gly	Cys	Thr	Cys	Lys 465

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Gly Pro Gly Ala Arg Arg Arg Gln Arg Gly Arg Leu Met Arg Arg
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Thr Pro Ala Arg Ala Ser Glu Ala Arg Ser Gln Val Thr Pro Ser
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Glu Gly Gly Ala Val Gly Gly Gln Asp Gly Glu Gln Ala Pro Pro
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Pro Thr Thr Val Pro Glu Ala Pro Gly Pro Leu Pro Ser Leu Pro
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Arg Leu Leu Pro Ser Leu Gly Pro Pro Gly Pro Thr Arg Ser Pro
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Pro Gly Pro His Thr Ala Val Leu Ala Leu Glu Asp Glu Asp Asp
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<212> PRT

<213> Homo sapiens

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Thr Ser Met Thr Phe Phe Ile Ile Ala Gln Ala Pro Glu Pro Tyr 35 40 45

Ile Val Ile Thr Gly Phe Glu Val Thr Val Ile Leu Phe Phe Ile 50 55 60

Leu Leu Tyr Val Leu Arg Leu Asp Arg Leu Met Lys Trp Leu Phe 65 70 75

Trp Pro Leu Leu Asp Ile Ile Asn Ser Leu Val Thr Thr Val Phe 80 85 90

Met Leu Ile Val Ser Val Leu Ala Leu Ile Pro Glu Thr Thr 95 100 105

Leu Thr Val Gly Gly Val Phe Ala Leu Val Thr Ala Val Cys 110 115 120

Cys Leu Ala Asp Gly Ala Leu Ile Tyr Arg Lys Leu Leu Phe Asn 125 130

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<212> PRT

<213> Homo sapien

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Leu Pro Leu Arg Val Ala Ala Ala Thr Asn Arg Val Val Ala Pro  $35 \hspace{1cm} 40 \hspace{1cm} 45$ 

Thr Pro Gly Pro Gly Thr Pro Ala Glu Arg His Ala Asp Gly Leu 50 60

Ala Leu Ala Leu Glu Pro Ala Leu Ala Ser Pro Ala Gly Ala Ala 65 70 75

Asn Phe Leu Ala Met Val Asp Asn Leu Gln Gly Asp Ser Gly Arg 80 85 90

Gly Tyr Tyr Leu Glu Met Leu Ile Gly Thr Pro Pro Gln Lys Leu
95 100 105

Gln	Ile	Leu	Val	Asp 110	Thr	Gly	Ser	Ser	Asn 115	Phe	Ala	Val	Ala	Gly 120
Thr	Pro	His	Ser	Tyr 125	Ile	Asp	Thr	Tyr	Phe 130	Asp	Thr	Glu	Arg	Ser 135
Ser	Thr	Tyr	Arg	Ser 140	Lys	Gly	Phe	Asp	Val 145	Thr	Val	Lys	Tyr	Thr 150
Gln	Gly	Ser	Trp	Thr 155	Gly	Phe	Val	Gly	Glu 160	Asp	Leu	Val	Thr	Ile 165
Pro	Lys	Gly	Phe	Asn 170	Thr	Ser	Phe	Leu	Val 175	Asn	Ile	Ala	Thr	Ile 180
Phe	Glu	Ser	Glu	Asn 185	Phe	Phe	Leu	Pro	Gly 190	Ile	Lys	Trp	Asn	Gly 195
Ile	Leu	Gly	Leu	Ala 200	Tyr	Ala	Thr	Leu	Ala 205	Lys	Pro	Ser	Ser	Ser 210
Leu	Glu	Thr	Phe	Phe 215	Asp	Ser	Leu	Val	Thr 220	Gln	Ala	Asn	Ile	Pro 225
Asn	Val	Phe	Ser	Met 230	Gln	Met	Cys	Gly	Ala 235	Gly	Leu	Pro	Val	Ala 240
Gly	Ser	Gly	Thr	Asn 245	Gly	Gly	Ser	Leu	Val 250	Leu	Gly	Gly	Ile	Glu 255
Pro	Ser	Leu	Tyr	Lys 260	Gly	Asp	Ile	Trp	Tyr 265	Thr	Pro	Ile	Lys	Glu 270
Glu	Trp	Tyr	Tyr	Gln 275	Ile	Glu	Ile	Leu	Lys 280	Leu	Glu	Ile	Gly	Gly 285
Gln	Ser	Leu	Asn	Leu 290	Asp	Суз	Arg	Glu	Tyr 295	Asn	Ala	Asp	Lys	Ala 300
Ile	Val	Asp	Ser	Gly 305	Thr	Thr	Leu	Leu	Arg 310	Leu	Pro	Gln	Lys	Val 315
Phe	Asp	Ala	Val	Val 320	Glu	Ala	Val	Ala	Arg 325	Ala	Ser	Leu	Ile	Pro 330
Glu	Phe	Ser	Asp	Gly 335	Phe	Trp	Thr	Gly	Ser 340	Gln	Leu	Ala	Cys	Trp 345
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Tyr	Leu	Arg	Asp	Glu 365	Asn	Ser	Ser	Arg	Ser 370	Phe	Arg	Ile	Thr	Ile 375
Leu	Pro	Gln	Leu	Tyr 380	Ile	Gln	Pro	Met	Met 385	Gly	Ala	Gly	Leu	Asn 390
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Arg A	Ala	Gln	Lys	Arg 425	Val	Gly	Phe	Ala	Ala 430	Ser	Pro	Cys	Ala	Glu 435
Ile A	Ala	Gly	Ala	Ala 440	Val	Ser	Glu	Ile	Ser 445	Gly	Pro	Phe	Ser	Thr 450
Glu A	Asp	Val	Ala	Ser 455	Asn	Cys	Val	Pro	Ala 460	Gln	Ser	Leu	Ser	Glu 465
Pro :	Ile	Leu	Trp	Ile 470	Val	Ser	Tyr	Ala	Leu 475	Met	Ser	Val	Cys	Gly 480
Ala :	Ile	Leu	Leu	Val 485	Leu	Ile	Val	Leu	Leu 490	Leu	Leu	Pro	Phe	Arg 495
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<213> Homo sapiens

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Ala Arg Val Val Leu Ala Cys Arg Ser Gln Glu Arg Gly Glu Ala

Ala Ala Phe Asp Leu Arg Gln Glu Ser Gly Asn Asn Glu Val Ile 80 85

Phe Met Ala Leu Asp Leu Ala Ser Leu Ala Ser Val Arg Ala Phe 100

Ala Thr Ala Phe Leu Ser Ser Glu Pro Arg Leu Asp Ile Leu Ile 115 120 110

His Asn Ala Gly Ile Ser Ser Cys Gly Arg Thr Arg Glu Ala Phe 125

Asn Leu Leu Arg Val Asn His Ile Gly Pro Phe Leu Leu Thr 150 140 145

His Leu Leu Pro Cys Leu Lys Ala Cys Ala Pro Ser Arg Val Val Val Val Ala Ser Ala Ala His Cys Arg Gly Arg Leu Asp Phe 180 Lys Arg Leu Asp Arg Pro Val Val Gly Trp Arg Gln Glu Leu Arg 190 Ala Tyr Ala Asp Thr Lys Leu Ala Asn Val Leu Phe Ala Arg Glu 205 Leu Ala Asn Gln Leu Glu Ala Thr Gly Val Thr Cys Tyr Ala Ala 220 His Pro Gly Pro Val Asn Ser Glu Leu Phe Leu Arg His Val Pro 235 Gly Trp Leu Arg Pro Leu Leu Arg Pro Leu Ala Trp Leu Val Leu Arg Ala Pro Arg Gly Gly Ala Gln Thr Pro Leu Tyr Cys Ala Leu 265 Gln Glu Gly Ile Glu Pro Leu Ser Gly Arg Tyr Phe Ala Asn Cys His Val Glu Glu Val Pro Pro Ala Ala Arg Asp Asp Arg Ala Ala His Arg Leu Trp Glu Ala Ser Lys Arg Leu Ala Gly Leu Gly Pro Gly Glu Asp Ala Glu Pro Asp Glu Asp Pro Gln Ser Glu Asp Ser 325 Glu Ala Pro Ser Ser Leu Ser Thr Pro His Pro Glu Glu Pro Thr 340 Val Ser Gln Pro Tyr Pro Ser Pro Gln Ser Ser Pro Asp Leu Ser 355 350 Lys Met Thr His Arg Ile Gln Ala Lys Val Glu Pro Glu Ile Gln

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Asn Gly Gln Pro Leu Ser Met Val Pro Pro Asp Pro His His Leu 50 55 60

Leu Pro Asp Gly Thr Leu Leu Leu Gln Pro Pro Ala Arg Gly
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His Ala His Asp Gly Gln Ala Leu Ser Thr Asp Leu Gly Val Tyr 80 85 90

Thr Cys Glu Ala Ser Asn Arg Leu Gly Thr Ala Val Ser Arg Gly 95 100 105

Ala Arg Leu Ser Val Ala Val Leu Arg Glu Asp Phe Gln Ile Gln
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Pro Arg Asp Met Val Ala Val Val Gly Glu Gln Phe Thr Leu Glu 125 130 135

Cys Gly Pro Pro Trp Gly His Pro Glu Pro Thr Val Ser Trp Trp 140 145 150

Lys Asp Gly Lys Pro Leu Ala Leu Gln Pro Gly Arg His Thr Val 155 160 165

Ser Gly Gly Ser Leu Leu Met Ala Arg Ala Glu Lys Ser Asp Glu 170 175 180

Gly Thr Tyr Met Cys Val Ala Thr Asn Ser Ala Gly His Arg Glu 185 190 195

Ser Arg Ala Ala Arg Val Ser Ile Gln Glu Pro Gln Asp Tyr Thr 200 205 210

Glu Pro Val Glu Leu Leu Ala Val Arg Ile Gln Leu Glu Asn Val 215 220 225

Thr Leu Leu Asn Pro Asp Pro Ala Glu Gly Pro Lys Pro Arg Pro 230 235 240

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Ala	Ser	Ser	Arg	Leu 755	Ser	Ser	Ser	Ser	Leu 760	Ser	Ser	Leu	Gly	Glu 765
Asp	Gln	Asp	Ser	Val 770	Leu	Thr	Pro	Glu	Glu 775	Val	Ala	Leu	Cys	Leu 780
Glu	Leu	Ser	Glu	Gly 785	Glu	Glu	Thr	Pro	Arg 790	Asn	Ser	Val	Ser	Pro 795
Met	Pro	Arg	Ala	Pro 800	Ser	Pro	Pro	Thr	Thr 805	Tyr	Gly	Tyr	Ile	Ser 810
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Val Ser Ser Ser Asp Gly Ser Phe Leu Ala Asp Ala His Phe Ala
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Arg Ala Leu Ala Val Ala Val Asp Ser Phe Gly Phe Gly Leu Glu
Pro Arg Glu Ala Asp Cys Val Phe Ile Asp Ala Ser Ser Pro Pro
                 905
                                      910
Ser Pro Arg Asp Glu Ile Phe Leu Thr Pro Asn Leu Ser Leu Pro
                                      925
                 920
Leu Trp Glu Trp Arg Pro Asp Trp Leu Glu Asp Met Glu Val Ser
                                      940
                 935
His Thr Gln Arg Leu Gly Arg Gly Met Pro Pro Trp Pro Pro Asp
                                      955
Ser Gln Ile Ser Ser Gln Arg Ser Gln Leu His Cys Arg Met Pro
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                                                          975
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Lys Ala Gly Ala Ser Pro Val Asp Tyr Ser
                 980
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<223> Synthetic oligonucleotide probe
<400> 212
 gaagggacct acatgtgtgt ggcc 24
<210> 213
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<223> Synthetic oligonucleotide probe
<400> 213
 actgaccttc cagctgagcc acac 24
<210> 214
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<220>
<223> Synthetic oligonucleotide probe
<400> 214
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<210> 215
<211> 2749
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 1869, 1887
<223> unknown base
<400> 215
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 ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaaatca 100
 gcgggttcga aggggacact gtgtccctgc agtgcaccta cagggaagag 150
 ctgagggacc accggaagta ctggtgcagg aagggtggga tcctcttctc 200
 tegetgetet ggeaceatet atgeagaaga agaaggeeag gagacaatga 250
 agggcagggt gtccatccgt gacagccgcc aggagctctc gctcattgtg 300
 accetgtgga acctcaccet gcaagacget ggggagtact ggtgtggggt 350
 cgaaaaacgg ggccccgatg agtctttact gatctctctg ttcgtctttc 400
 caggaccetg etgtecteec teccettete ecacetteca geetetgget 450
 acaacacgee tgcageecaa ggcaaaaget cageaaacee ageeeccagg 500
 attgacttct cctgggctct acccggcagc caccacagcc aagcagggga 550
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 gaaaggactt ctcagtacac aggaacctct cctcacccag cgacctctcc 650
 teetgeaggg ageteeegee eecceatgea getggaetee aceteageag 700
 aggacaccag tocagetete ageagtggea getetaagee cagggtgtee 750
 atcccgatgg tccgcatact ggccccagtc ctggtgctgc tgagccttct 800
 gtcagccgca ggcctgatcg ccttctgcag ccacctgctc ctgtggagaa 850
 aggaagctca acaggccacg gagacacaga ggaacgagaa gttctggctc 900
 tcacgcttga ctgcggagga aaaggaagcc ccttcccagg cccctgaggg 950
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ggacgtgatc tcgatgcctc ccctccacac atctgaggag gagctgggct 1000

cagtgaagca gtatggctgg ctggatcagc accgattccc gaaagctttc 1100 caceteagee teagagteea getgeeegga eteeaggget eteeceacee 1150 tccccaggct ctcctcttgc atgttccagc ctgacctaga agcgtttgtc 1200 agccctggag cccagagcgg tggccttgct cttccggctg gagactggga 1250 catecetgat aggtteacat ecetgggeag agtaceagge tgetgaeeet 1300 cagcagggcc agacaaggct cagtggatct ggtctgagtt tcaatctgcc 1350 aggaactect gggeeteatg eccagtgteg gaccetgeet teeteecaet 1400 ccagacccca ccttgtcttc cctccctggc gtcctcagac ttagtcccac 1450 ggtctcctgc atcagctggt gatgaagagg agcatgctgg ggtgagactg 1500 qqattctqqc ttctctttga accacctgca tccagccctt caggaagcct 1550 gtgaaaaacg tgattcctgg ccccaccaag acccaccaaa accatctctg 1600 ggcttggtgc aggactctga attctaacaa tgcccagtga ctgtcgcact 1650 tgagtttgag ggccagtggg cctgatgaac gctcacaccc cttcagctta 1700 gagtctgcat ttgggctgtg acgtctccac ctgccccaat agatctgctc 1750 tgtctgcgac accagatcca cgtggggact cccctgaggc ctgctaagtc 1800 caggccttgg tcaggtcagg tgcacattgc aggataagcc caggaccggc 1850 acagaagtgg ttgcctttnc catttgccct ccctggncca tgccttcttg 1900 cctttggaaa aaatgatgaa gaaaaccttg gctccttcct tgtctggaaa 1950 gggttacttg cctatgggtt ctggtggcta gagagaaaag tagaaaacca 2000 qaqtqcacqt aqqtqtctaa cacaqaqqaq aqtaqqaaca qqqcqqatac 2050 ctgaaggtga ctccgagtcc agcccctgg agaaggggtc gggggtggtg 2100 gtaaagtagc acaactacta ttttttttct ttttccatta ttattgtttt 2150 ttaaqacaqa atctcqtqct qctqcccaqq ctqqaqtqca qtqgcacqat 2200 ctgcaaactc cgcctcctgg gttcaagtga ttcttctgcc tcagcctccc 2250 gagtagctgg gattacaggc acgcaccacc acacctggct aatttttgta 2300 cttttagtag agatggggtt tcaccatgtt ggccaggctg gtcttgaact 2350 cctgacctca aatgagcctc ctgcttcagt ctcccaaatt gccgggatta 2400 caggeatgag ceactgtgte tggeeetatt teetttaaaa agtgaaatta 2450

<210> 216

<211> 332

<212> PRT

<213> Homo sapiens

<400> 216

Met Arg Leu Leu Val Leu Leu Trp Gly Cys Leu Leu Pro Gly
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Tyr Glu Ala Leu Glu Gly Pro Glu Glu Ile Ser Gly Phe Glu Gly 20 25 30

Asp Thr Val Ser Leu Gln Cys Thr Tyr Arg Glu Glu Leu Arg Asp 35 40 45

His Arg Lys Tyr Trp Cys Arg Lys Gly Gly Ile Leu Phe Ser Arg
50 55 60

Cys Ser Gly Thr Ile Tyr Ala Glu Glu Glu Gly Gln Glu Thr Met
65 70 75

Lys Gly Arg Val Ser Ile Arg Asp Ser Arg Gln Glu Leu Ser Leu 80 85 90

Ile Val Thr Leu Trp Asn Leu Thr Leu Gln Asp Ala Gly Glu Tyr 95 100 105

Trp Cys Gly Val Glu Lys Arg Gly Pro Asp Glu Ser Leu Leu Ile 110 115 120

Ser Leu Phe Val Phe Pro Gly Pro Cys Cys Pro Pro Ser Pro Ser 125 130 135

Pro Thr Phe Gln Pro Leu Ala Thr Thr Arg Leu Gln Pro Lys Ala 140 145 150

Lys Ala Gln Gln Thr Gln Pro Pro Gly Leu Thr Ser Pro Gly Leu
155 160 165

Tyr Pro Ala Ala Thr Thr Ala Lys Gln Gly Lys Thr Gly Ala Glu 170 175 180

Ala Pro Pro Leu Pro Gly Thr Ser Gln Tyr Gly His Glu Arg Thr 185 190 195

Ser Gln Tyr Thr Gly Thr Ser Pro His Pro Ala Thr Ser Pro Pro

210 200 205 Ala Gly Ser Ser Arg Pro Pro Met Gln Leu Asp Ser Thr Ser Ala Glu Asp Thr Ser Pro Ala Leu Ser Ser Gly Ser Ser Lys Pro Arg 230 240 Val Ser Ile Pro Met Val Arg Ile Leu Ala Pro Val Leu Val Leu 245 Leu Ser Leu Ser Ala Ala Gly Leu Ile Ala Phe Cys Ser His 260 Leu Leu Trp Arg Lys Glu Ala Gln Gln Ala Thr Glu Thr Gln 280 Arg Asn Glu Lys Phe Trp Leu Ser Arg Leu Thr Ala Glu Glu Lys 295 290 Glu Ala Pro Ser Gln Ala Pro Glu Gly Asp Val Ile Ser Met Pro Pro Leu His Thr Ser Glu Glu Glu Leu Gly Phe Ser Lys Phe Val 330 Ser Ala <210> 217 <211> 24 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 217 ccctgcagtg cacctacagg gaag 24 <210> 218 <211> 24 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 218 ctgtcttccc ctgcttggct gtgg 24 <210> 219 <211> 47 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe

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<210> 220
<211> 950
<212> DNA
<213> Homo sapiens
<400> 220
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 ggggtggcag gagccgcaga gccagagcag acagccgaga aacaggtgga 100
 cagtgtgaaa gaaccagtgg tctcgctctg ttgcccaggc tagagtgtac 150
 tggcgtgatc atagctcact gcagcctcag actcctggac ttgagaaatc 200
 ctcctgcctt agcctcctgc atatctggga ctccaggggt gcactcaagc 250
 cctgtttctt ctccttctgt gagtggacca cggaggctgg tgagctgcct 300
 gtcatcccaa agctcagctc tgagccagag tggtggtggc tccacctctg 350
 ccgccggcat agaagccagg agcagggctc tcagaaggcg gtggtgccca 400
 gctgggatca tgttgttggc cctggtctgt ctgctcagct gcctgctacc 450
 ctccagtgag gccaagctct acggtcgttg tgaactggcc agagtgctac 500
 atgacttcgg gctggacgga taccggggat acagcctggc tgactgggtc 550
 tgccttgctt atttcacaag cggtttcaac gcagctgctt tggactacga 600
 ggctgatggg agcaccaaca acgggatctt ccagatcaac agccggaggt 650
 ggtgcagcaa cctcaccccg aacgtcccca acgtgtgccg gatgtactgc 700
 tcagatttgt tgaatcctaa tctcaaggat accgttatct gtgccatgaa 750
 gataacccaa gagcctcagg gtctgggtta ctgggaggcc tggaggcatc 800
 actgccaggg aaaagacctc actgaatggg tggatggctg tgacttctag 850
 gatggacgga accatgcaca gcaggctggg aaatgtggtt tggttcctga 900
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cctaggcttg ggaagacaag ccagcgaata aaggatggtt gaacgtgaaa 950

<sup>&</sup>lt;210> 221

<sup>&</sup>lt;211> 146

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 221

Met Leu Leu Ala Leu Val Cys Leu Leu Ser Cys Leu Leu Pro Ser

Ser Glu Ala Lys Leu Tyr Gly Arg Cys Glu Leu Ala Arg Val Leu 20 25 30

<210> 225

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Trp Val Cys Leu Ala Tyr Phe Thr Ser Gly Phe Asn Ala Ala Ala
Leu Asp Tyr Glu Ala Asp Gly Ser Thr Asn Asn Gly Ile Phe Gln
Ile Asn Ser Arg Arg Trp Cys Ser Asn Leu Thr Pro Asn Val Pro
Asn Val Cys Arg Met Tyr Cys Ser Asp Leu Leu Asn Pro Asn Leu
Lys Asp Thr Val Ile Cys Ala Met Lys Ile Thr Gln Glu Pro Gln
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Gly Leu Gly Tyr Trp Glu Ala Trp Arg His His Cys Gln Gly Lys
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Asp Leu Thr Glu Trp Val Asp Gly Cys Asp Phe
<210> 222
<211> 24
<212> DNA
<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 222
gggatcatgt tgttggccct ggtc 24
<210> 223
<211> 23
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 223
 gcaaggcaga cccagtcagc cag 23
<210> 224
<211> 45
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 224
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<211> 2049 <212> DNA <213> Homo sapiens

<400> 225 agccgctgcc ccgggccggg cgcccgcggc ggcaccatga gtccccgctc 50 gtgcctgcgt tcgctgcgcc tcctcgtctt cgccgtcttc tcagccgccg 100 cgagcaactg gctgtacctg gccaagctgt cgtcggtggg gagcatctca 150 gaggaggaga cgtgcgagaa actcaagggc ctgatccaga ggcaggtgca 200 gatgtgcaag cggaacctgg aagtcatgga ctcggtgcgc cgcggtgccc 250 agctggccat tgaggagtgc cagtaccagt tccggaaccg gcgctggaac 300 tgctccacac tcgactcctt gcccgtcttc ggcaaggtgg tgacgcaagg 350 gactcgggag gcggccttcg tgtacgccat ctcttcggca ggtgtggcct 400 ttgcagtgac gcgggcgtgc agcagtgggg agctggagaa gtgcggctgt 450 gacaggacag tgcatggggt cagcccacag ggcttccagt ggtcaggatg 500 ctctgacaac atcgcctacg gtgtggcctt ctcacagtcg tttgtggatg 550 tgcgggagag aagcaagggg gcctcgtcca gcagagccct catgaacctc 600 cacaacaatg aggccggcag gaaggccatc ctgacacaca tgcgggtgga 650 atgcaagtgc cacggggtgt caggctcctg tgaggtaaag acgtgctggc 700 gagccgtgcc gcccttccgc caggtgggtc acgcactgaa ggagaagttt 750 gatggtgcca ctgaggtgga gccacgccgc gtgggctcct ccagggcact 800 ggtaccacgc aacgcacagt tcaagccgca cacagatgag gacctggtgt 850 acttggagcc tagccccgac ttctgtgagc aggacatgcg cagcggcgtg 900 ctgggcacga ggggccgcac atgcaacaag acgtccaagg ccatcgacgg 950 ctgtgagctg ctgtgctgtg gccgcggctt ccacacggcg caggtggagc 1000 tggctgaacg ctgcagctgc aaattccact ggtgctgctt cgtcaagtgc 1050 cggcagtgcc agcggctcgt ggagttgcac acgtgccgat gaccgcctgc 1100 ctagccctgc gccggcaacc acctagtggc ccagggaagg ccgataattt 1150 aaacagtctc ccaccaccta ccccaagaga tactggttgt attttttgtt 1200 ctggtttggt ttttgggtcc tcatgttatt tattgccgaa accaggcagg 1250 caaccccaag ggcaccaacc agggcctccc caaagcctgg gcctttgtgg 1300 ctgccactga ccaaagggac cttgctcgtg ccgctggctg cccgcatgtg 1350 getgecaetg accaetcagt tgttatetgt gteegttttt etacttgeag 1400
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agaeceacet aggeaggeat ataggetgee ateetggaee agggateeeg 1850
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eatgaaactg aaaaacacae acaecacae acaecacae acaecacae 1950
acaecacacae ggacacacae acaecacee ttteacage gaggaaaggg 2000
etgtgeett geagteatge eegagteaee ttteacagea etgtteete 2049

<210> 226

<211> 351

<212> PRT

<213> Homo sapiens

<400> 226

Met Ser Pro Arg Ser Cys Leu Arg Ser Leu Arg Leu Leu Val Phe
1 5 10 15

Ala Val Phe Ser Ala Ala Ala Ser Asn Trp Leu Tyr Leu Ala Lys 20 25 30

Leu Ser Ser Val Gly Ser Ile Ser Glu Glu Glu Thr Cys Glu Lys 35 40 45

Leu Lys Gly Leu Ile Gln Arg Gln Val Gln Met Cys Lys Arg Asn 50 55 60

Leu Glu Val Met Asp Ser Val Arg Arg Gly Ala Gln Leu Ala Ile 65 70 75

Glu Glu Cys Gln Tyr Gln Phe Arg Asn Arg Arg Trp Asn Cys Ser 80 85 90

Thr Leu Asp Ser Leu Pro Val Phe Gly Lys Val Val Thr Gln Gly 95 100 105

Thr Arg Glu Ala Ala Phe Val Tyr Ala Ile Ser Ser Ala Gly Val 110 115 120

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Ala Phe Ala Val Thr Arg Ala Cys Ser Ser Gly Glu Leu Glu Lys
Cys Gly Cys Asp Arg Thr Val His Gly Val Ser Pro Gln Gly Phe
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                140
Gln Trp Ser Gly Cys Ser Asp Asn Ile Ala Tyr Gly Val Ala Phe
Ser Gln Ser Phe Val Asp Val Arg Glu Arg Ser Lys Gly Ala Ser
                170
Ser Ser Arg Ala Leu Met Asn Leu His Asn Asn Glu Ala Gly Arg
Lys Ala Ile Leu Thr His Met Arg Val Glu Cys Lys Cys His Gly
Val Ser Gly Ser Cys Glu Val Lys Thr Cys Trp Arg Ala Val Pro
Pro Phe Arg Gln Val Gly His Ala Leu Lys Glu Lys Phe Asp Gly
Ala Thr Glu Val Glu Pro Arg Arg Val Gly Ser Ser Arg Ala Leu
                                    250
Val Pro Arg Asn Ala Gln Phe Lys Pro His Thr Asp Glu Asp Leu
                                    265
Val Tyr Leu Glu Pro Ser Pro Asp Phe Cys Glu Gln Asp Met Arg
                                    280
Ser Gly Val Leu Gly Thr Arg Gly Arg Thr Cys Asn Lys Thr Ser
Lys Ala Ile Asp Gly Cys Glu Leu Leu Cys Cys Gly Arg Gly Phe
His Thr Ala Gln Val Glu Leu Ala Glu Arg Cys Ser Cys Lys Phe
His Trp Cys Cys Phe Val Lys Cys Arg Gln Cys Gln Arg Leu Val
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Glu Leu His Thr Cys Arg
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350

<210> 227

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 227

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<210> 228
<211> 28
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 228
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<210> 229
<211> 41
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 229
 tgcttcgtca agtgccggca gtgccagcgg ctcgtggagt t 41
<210> 230
<211> 1355
<212> DNA
<213> Homo sapiens
<400> 230
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 gggtgcctgc atcgccatgg acaccaccag gtacagcaag tggggcggca 100
 gctccgagga ggtccccgga gggccctggg gacgctgggt gcactggagc 150
 aggagacccc tcttcttggc cctggctgtc ctggtcacca cagtcctttg 200
 ggctgtgatt ctgagtatcc tattgtccaa ggcctccacg gagcgcgcgg 250
 cgctgcttga cggccacgac ctgctgagga caaacgcctc gaagcagacg 300
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 cgcaggcgaa gctgatggag caggagagcg ccctgcggga actgcgtgag 450
 cgcgtgaccc agggcttggc tgaagccggc aggggccgtg aggacgtccg 500
 cactgagetg tteegggege tggaggeegt gaggeteeag aacaacteet 550
 gcgagccgtg ccccacgtcg tggctgtcct tcgagggctc ctgctacttt 600
 ttctctqtqc caaagacgac gtgggcggcg gcgcaggatc actgcgcaga 650
 tgccagcgcg cacctggtga tcgttggggg cctggatgag cagggcttcc 700
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tcactcggaa cacgcgtggc cgtggttact ggctgggcct gagggctgtg 750

cgccatctgg gcaaggttca gggctaccag tgggtgacg gagtctctct 800 cagcttcagc cactggaacc agggagagcc caatgacgct tgggggcgcg 850 agaactgtgt catgatgctg cacacggggc tgtggaacga cgcaccgtgt 900 gacagcgaga aggacggctg gatctgtgag aaaaggcaca actgctgacc 950 ccgcccagtg ccctggagcc gcgcccattg cagcatgtcg tatcctgggg 1000 gctgctcacc tccctggctc ctggagctga ttgccaaaga gttttttct 1050 tcctcatcca ccgctgctga gtctcagaaa cacttggccc aacatagccc 1100 tgtccagccc agtgcctggg ctctgggacc tccatgccga cctcatccta 1150 actccactca cgcagacca acctaacctc cactagctcc aaaatccctg 1200 ctcctgcgtc cccgtgatat gcctccactt ctctccctaa ccaaggttag 1250 gtgactgagg actggagctg tttggtttc tcgcatttc caccaaactg 1300 gaagctgtt ttgcagcctg aggaagcatc aataaatat tgagaaatga 1350 aaaaa 1355

<210> 231

<211> 293

<212> PRT

<213> Homo sapiens

<400> 231

Met Asp Thr Thr Arg Tyr Ser Lys Trp Gly Gly Ser Ser Glu Glu 1 5 10 15

Val Pro Gly Gly Pro Trp Gly Arg Trp Val His Trp Ser Arg Arg 20 25 30

Pro Leu Phe Leu Ala Leu Ala Val Leu Val Thr Thr Val Leu Trp 35 40 45

Ala Val Ile Leu Ser Ile Leu Leu Ser Lys Ala Ser Thr Glu Arg
50 55 60

Ala Ala Leu Leu Asp Gly His Asp Leu Leu Arg Thr Asn Ala Ser 65 70 75

Lys Gln Thr Ala Ala Leu Gly Ala Leu Lys Glu Glu Val Gly Asp 80 85

Cys His Ser Cys Cys Ser Gly Thr Gln Ala Gln Leu Gln Thr Thr 95 100 105

Arg Ala Glu Leu Gly Glu Ala Gln Ala Lys Leu Met Glu Gln Glu 110 115 120

Ser Ala Leu Arg Glu Leu Arg Glu Arg Val Thr Gln Gly Leu Ala 125 130 135

<212> DNA

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Ala Leu Glu Ala Val Arg Leu Gln Asn Asn Ser Cys Glu Pro Cys
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                 155
Pro Thr Ser Trp Leu Ser Phe Glu Gly Ser Cys Tyr Phe Phe Ser
Val Pro Lys Thr Trp Ala Ala Ala Gln Asp His Cys Ala Asp
Ala Ser Ala His Leu Val Ile Val Gly Gly Leu Asp Glu Gln Gly
                                     205
Phe Leu Thr Arg Asn Thr Arg Gly Arg Gly Tyr Trp Leu Gly Leu
                 215
                                     220
Arg Ala Val Arg His Leu Gly Lys Val Gln Gly Tyr Gln Trp Val
Asp Gly Val Ser Leu Ser Phe Ser His Trp Asn Gln Gly Glu Pro
                 245
Asn Asp Ala Trp Gly Arg Glu Asn Cys Val Met Met Leu His Thr
Gly Leu Trp Asn Asp Ala Pro Cys Asp Ser Glu Lys Asp Gly Trp
                                     280
                 275
 Ile Cys Glu Lys Arg His Asn Cys
                 290
<210> 232
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 232
gcgagaactg tgtcatgatg ctgc 24
<210> 233
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 233
gtttctgaga ctcagcagcg gtgg 24
<210> 234
<211> 50
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<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 234
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<210> 235
<211> 1847
<212> DNA
<213> Homo sapiens
<400> 235
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 ctcccacgtc ctatctqcct ctcgctggag gccaggccgt gcagcatcga 150
 agacaggagg aactggagcc tcattggccg gcccggggcg ccggcctcgg 200
 gcttaaatag gagctccggg ctctggctgg gacccgaccg ctgccggccg 250
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 cctgggcaag gccctctgcg ctctcctcct ggccactctc ggcgccgccg 350
 gccagcctct tgggggagag tccatctgtt ccgccagagc cccggccaaa 400
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 gtaccccctg ttccgccccc ctgcgcagtg gtcttcgctg ctgggggccg 500
 cgcatagete egactacage atgtggagga agaaccagta egteagtaac 550
 gggctgcgcg actttgcgga gcgcggcgag gcctgggcgc tgatgaagga 600
 gatcgaggcg gcgggggagg cgctgcagag cgtgcacgag gtgttttcgg 650
 cgcccgccgt ccccagcggc accgggcaga cgtcggcgga gctggaggtg 700
 cagegeagge actegetggt etegtttgtg gtgegeateg tgeecageee 750
 cgactggttc gtgggcgtgg acagcctgga cctgtgcgac ggggaccgtt 800
 ggcgggaaca ggcggcgctg gacctgtacc cctacgacgc cgggacggac 850
 ageggettea cetteteete ecceaactte gecaceatee egeaggaeae 900
 ggtgaccgag ataacgtect ceteteccag ceacceggee aacteettet 950
 actaccegeg getgaaggee etgeeteeca tegecagggt gacactgetg 1000
 cggctgcgac agagccccag ggccttcatc cctcccgccc cagtcctgcc 1050
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caqcaqqqac aatqaqattq tagacagcgc ctcagttcca gaaacgccgc 1100

<210> 236

<211> 331

<212> PRT

<213> Homo sapiens

<400> 236

Met Glu Asn Pro Ser Pro Ala Ala Ala Leu Gly Lys Ala Leu Cys 1 5 10 15

Ala Leu Leu Ala Thr Leu Gly Ala Ala Gly Gln Pro Leu Gly

Gly Glu Ser Ile Cys Ser Ala Arg Ala Pro Ala Lys Tyr Ser Ile 35 40 45

Thr Phe Thr Gly Lys Trp Ser Gln Thr Ala Phe Pro Lys Gln Tyr 50 55 60

Pro Leu Phe Arg Pro Pro Ala Gln Trp Ser Ser Leu Leu Gly Ala 65 70 75

Ala His Ser Ser Asp Tyr Ser Met Trp Arg Lys Asn Gln Tyr Val 80 85 90

Ser Asn Gly Leu Arg Asp Phe Ala Glu Arg Gly Glu Ala Trp Ala 95 100 105

Leu Met Lys Glu Ile Glu Ala Ala Gly Glu Ala Leu Gln Ser Val

				110					115					120
His	Glu	Val	Phe	Ser 125	Ala	Pro	Ala	Val	Pro 130	Ser	Gly	Thr	Gly	Gln 135
Thr	Ser	Ala	Glu	Leu 140	Glu	Val	Gln	Arg	Arg 145	His	Ser	Leu	Val	Ser 150
Phe	Val	Val	Arg	Ile 155	Val	Pro	Ser	Pro	Asp 160	Trp	Phe	Val	Gly	Val 165
Asp	Ser	Leu	Asp	Leu 170	Cys	Asp	Gly	Asp	Arg 175	Trp	Arg	Glu	Gln	Ala 180
Ala	Leu	Asp	Leu	Tyr 185	Pro	Tyr	Asp	Ala	Gly 190	Thr	Asp	Ser	Gly	Phe 195
Thr	Phe	Ser	Ser	Pro 200	Asn	Phe	Ala	Thr	Ile 205	Pro	Gln	Asp	Thr	Val 210
Thr	Glu	Ile	Thr	Ser 215	Ser	Ser	Pro	Ser	His 220	Pro	Ala	Asn	Ser	Phe 225
Tyr	Tyr	Pro	Arg	Leu 230	Lys	Ala	Leu	Pro	Pro 235	Ile	Ala	Arg	Val	Thr 240
Leu	Leu	Arg	Leu	Arg 245	Gln	Ser	Pro	Arg	Ala 250	Phe	Ile	Pro	Pro	Ala 255
Pro	Val	Leu	Pro	Ser 260	Arg	Asp	Asn	Glu	Ile 265	Val	Asp	Ser	Ala	Ser 270
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Arg	Thr	Arg	Tyr	Val 305	Arg	Val	Gln	Pro	Ala 310	Asn	Asn	Gly	Ser	Pro 315
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35 40 45

Glu Ala Tyr Tyr Asp Asn Thr Ile Phe His Arg Val Val Pro Gly
50 55 60

Phe Ile Val Gln Gly Gly Asp Pro Thr Gly Thr Gly Ser Gly Gly 65 70 75

Glu Ser Ile Tyr Gly Ala Pro Phe Lys Asp Glu Phe His Ser Arg 80 85 90

Leu Arg Phe Asn Arg Arg Gly Leu Val Ala Met Ala Asn Ala Gly 95 100 105

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Asp	Thr	Val	Tyr	Asn 140	Met	Leu	Arg	Leu	Ser 145	Glu	Val	Asp	Ile	Asp 150
Asp	Asp	Glu	Arg	Pro 155	His	Asn	Pro	His	Lys 160	Ile	Lys	Ser	Cys	Glu 165
Val	Leu	Phe	Asn	Pro 170	Phe	Asp	Asp	Ile	Ile 175	Pro	Arg	Glu	Ile	Lys 180
Arg	Leu	Lys	Lys	Glu 185	Lys	Pro	Glu	Glu	Glu 190	Val	Lys	Lys	Leu	Lys 195
Pro	Lys	Gly	Thr	Lys 200	Asn	Phe	Ser	Leu	Leu 205	Ser	Phe	Gly	Glu	Glu 210
Ala	Glu	Glu	Glu	Glu 215	Glu	Glu	Val	Asn	Arg 220	Val	Ser	Gln	Ser	Met 225
Lys	Gly	Lys	Ser	Lys 230	Ser	Ser	His	Asp	Leu 235	Leu	Lys	Asp	Asp	Pro 240
His	Leu	Ser	Ser	Val 245	Pro	Val	Val	Glu	Ser 250	Glu	Lys	Gly	Asp	Ala 255
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Gly	Glu	Gly	Glu	Val 305	Glu	Lys	Lys	Ser	Val 310	Ser	Arg	Ser	Glu	Glu 315
Leu	Arg	Lys	Glu	Ala 320	Arg	Gln	Leu	Lys	Arg 325	Glu	Leu	Leu	Ala	Ala 330
Lys	Gln	Lys	Lys	Val 335	Glu	Asn	Ala	Ala	Lys 340	Gln	Ala	Glu	Lys	Arg 345
Ser	Glu	Glu	Glu	Glu 350	Ala	Pro	Pro	Asp	Gly 355	Ala	Val	Ala	Glu	Tyr 360
Arg	Arg	Glu	Lys	Gln 365	Lys	Tyr	Glu	Ala	Leu 370	Arg	Lys	Gln	Gln	Ser 375
Lys	Lys	Gly	Thr	Ser 380	Arg	Glu	Asp	Gln	Thr 385		Ala	Leu	Leu	Asn 390
Gln	Phe	Lys	Ser	Lys	Leu	Thr	Gln	Ala	Ile	Ala	Glu	Thr	Pro	Glu

395 400 405 Asn Asp Ile Pro Glu Thr Glu Val Glu Asp Asp Glu Gly Trp Met Ser His Val Leu Gln Phe Glu Asp Lys Ser Arg Lys Val Lys Asp 430 425 Ala Ser Met Gln Asp Ser Asp Thr Phe Glu Ile Tyr Asp Pro Arg Asn Pro Val Asn Lys Arg Arg Glu Glu Ser Lys Lys Leu Met 455 465 Arg Glu Lys Lys Glu Arg Arg <210> 246 <211> 24 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 246 tgcggagatc ctactggcac aggg 24 <210> 247 <211> 18 <212> DNA <213> Artificial Sequence <223> Synthetic oligonucleotide probe <400> 247 cgagttagtc agagcatg 18 <210> 248 <211> 18 <212> DNA <213> Artificial Sequence <220> <223> Synthetic oligonucleotide probe <400> 248 cagatggtgc tgttgccg 18 <210> 249 <211> 29 <212> DNA <213> Artificial Sequence

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 Asn Leu Gly Ser Thr 50
 Ser Thr Pro Ala Thr Thr Ser Ala Pro Ser 60

 Ser Gly Phe Gly Thr 65
 Gly Leu Phe Gly Ser Lys Pro Ala Thr Gly 75

 Phe Thr Leu Gly Gly Thr Asn Thr Gly Ala Leu His Thr Lys Arg 90

 Pro Gln Val Val Thr 95
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 His Val Gly Lys Thr Pro Ile Gln Val Phe Leu Gly Val Pro Phe 125

 Ser Arg Pro Pro Leu Gly Ile Leu Arg Phe Ala Pro Pro Glu Pro 135

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Ser	Trp	Gly	Gln	Leu 200	Ala	Ser	Met	Tyr	Val 205	Ser	Thr	Arg	Glu	Arg 210
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Arg	Ala	Ile	Ser	Gln 350		Gly	Thr	Ala	Leu 355	Phe	Arg	Leu	Phe	Ile 360
Thr	Ser	Asn	Pro	Leu 365		Val	Ala	Lys	Lys 370		Ala	His	Leu	Ala 375
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Pro Arg Gln Asp Trp Thr Gly Ser Thr Pro Ala Tyr Gly Tyr Trp 50 55 60

Phe Lys Ala Val Thr Glu Thr Thr Lys Gly Ala Pro Val Ala Thr 65 70 75

Asn His Gln Ser Arg Glu Val Glu Met Ser Thr Arg Gly Arg Phe 80 85 90

Gln Leu Thr Gly Asp Pro Ala Lys Gly Asn Cys Ser Leu Val Ile 95 100 105

Arg Asp Ala Gln Met Gln Asp Glu Ser Gln Tyr Phe Phe Arg Val 110 115 120

Glu Arg Gly Ser Tyr Val Thr Tyr Asn Phe Met Asn Asp Gly Phe 125 130

Phe Leu Lys Val Thr Val Leu Ser Phe Thr Pro Arg Pro Gln Asp 140 145 150

His Asn Thr Asp Leu Thr Cys His Val Asp Phe Ser Arg Lys Gly 155 160 165

Val Ser Ala Gln Arg Thr Val Arg Leu Arg Val Ala Tyr Ala Pro 170 175 180

Arg Asp Leu Val Ile Ser Ile Ser Arg Asp Asn Thr Pro Ala Leu 185 190 195

Glu Pro Gln Pro Gln Gly Asn Val Pro Tyr Leu Glu Ala Gln Lys 200 205 210

Gly Gln Phe Leu Arg Leu Leu Cys Ala Ala Asp Ser Gln Pro Pro 215 220 225

Ala Thr Leu Ser Trp Val Leu Gln Asn Arg Val Leu Ser Ser Ser 230 235 240

His Pro Trp Gly Pro Arg Pro Leu Gly Leu Glu Leu Pro Gly Val 245 250 255

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Pro	Glu	Asn	Leu	Arg 290	Val	Met	Val	Ser	Gln 295	Ala	Asn	Arg	Thr	Val 300
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Gln	Ser	Leu	Cys	Leu 320	Val	Cys	Val	Thr	His 325	Ser	Ser	Pro	Pro	Ala 330
Arg	Leu	Ser	Trp	Thr 335	Gln	Arg	Gly	Gln	Val 340	Leu	Ser	Pro	Ser	Gln 345
Pro	Ser	Asp	Pro	Gly 350	Val	Leu	Glu	Leu	Pro 355	Arg	Val	Gln	Val	Glu 360
His	Glu	Gly	Glu	Phe 365	Thr	Cys	His	Ala	Arg 370	His	Pro	Leu	Gly	Ser 375
Gln	His	Val	Ser	Leu 380	Ser	Leu	Ser	Val	His 385	Tyr	Lys	Lys	Gly	Leu 390
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Thr	Ala	Leu	Leu	Phe 410	Leu	Cys	Leu	Ala	Leu 415	Ile	Ile	Met	Lys	Ile 420
Leu	Pro	Lys	Arg	Arg 425	Thr	Gln	Thr	Glu	Thr 430	Pro	Arg	Pro	Arg	Phe 435
Ser	Arg	His	Ser	Thr 440	Ile	Leu	Asp	Tyr	Ile 445	Asn	Val	Val	Pro	Thr 450
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Ser	Pro	Arg	Thr	Pro 470	Pro	Pro	Pro	Gly	Ala 475	Pro	Ser	Pro	Glu	Ser 480
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Pro	Lys	Ser	Ser	Thr 500	Gln	Ala	Pro	Glu	Ser 505	Gln	Glu	Ser	Gln	Glu 510
Glu	Leu	His	Tyr	Ala 515	Thr	Leu	Asn	Phe	Pro 520	Gly	Val	Arg	Pro	Arg 525
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Val Lys Gln Pro Val Arg Ser His Leu Arg Val Lys Arg Gly Trp
35 40 45

Val Trp Asn Gln Phe Phe Val Pro Glu Glu Met Asn Thr Thr Ser 50 55 60

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Ile	Ile	Asp	Glu	Arg 95	Thr	Gly	Asp	Ile	Tyr 100	Ala	Ile	Gln	Lys	Leu 105
Asp	Arg	Glu	Glu	Arg 110	Ser	Leu	Tyr	Ile	Leu 115	Arg	Ala	Gln	Val	Ile 120
Asp	Ile	Ala	Thr	Gly 125	Arg	Ala	Val	Glu	Pro 130	Glu	Ser	Glu	Phe	Val 135
Ile	Lys	Val	Ser	Asp 140	Ile	Asn	Asp	Asn	Glu 145	Pro	Lys	Phe	Leu	Asp 150
Glu	Pro	Tyr	Glu	Ala 155	Ile	Val	Pro	Glu	Met 160	Ser	Pro	Glu	Gly	Thr 165
Leu	Val	Ile	Gln	Val 170	Thr	Ala	Ser	Asp	Ala 175	Asp	Asp	Pro	Ser	Ser 180
Gly	Asn	Asn	Ala	Arg 185	Leu	Leu	Tyr	Ser	Leu 190	Leu	Gln	Gly	Gln	Pro 195
Tyr	Phe	Ser	Val	Glu 200	Pro	Thr	Thr	Gly	Val 205	Ile	Arg	Ile	Ser	Ser 210
Lys	Met	Asp	Arg	Glu 215	Leu	Gln	Asp	Glu	Tyr 220	Trp	Val	Ile	Ile	Gln 225
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Phe	Lys	Glu	Ser	Leu 260	Tyr	Arg	Leu	Thr	Val 265	Ser	Glu	Ser	Ala	Pro 270
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Val	Val	Ser	Ala	Thr 395	Asp	Pro	Asp	Asn	Arg 400	Lys	Ser	Pro	Ile	Arg 405
Tyr	Ser	Ile	Thr	Arg 410	Ser	Lys	Val	Phe	Asn 415	Ile	Asn	Asp	Asn	Gly 420
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Tyr	Asn	Leu	Ser	Ile 440	Thr	Ala	Thr	Glu	Lys 445	Tyr	Asn	Ile	Glu	Gln 450
Ile	Ser	Ser	Ile	Pro 455	Leu	Tyr	Val	Gln	Val 460	Leu	Asn	Ile	Asn	Asp 465
His	Ala	Pro	Glu	Phe 470	Ser	Gln	Tyr	Tyr	Glu 475	Thr	Tyr	Val	Cys	Glu 480
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Cys	Asp	Cys	Gly	Asp 575	Ser	Gly	Ser	Thr	Gln 580	Thr	Cys	Gln	Tyr	Gln 585
Glu	Leu	Val	Leu	Ser 590	Met	Gly	Phe	Lys	Thr 595	Glu	Val	Ile	Ile	Ala 600
Ile	Leu	Ile	Cys	Ile 605	Met	Ile	Ile	Phe	Gly 610	Phe	Ile	Phe	Leu	Thr 615
Leu	Gly	Leu	Lys	Gln 620	Arg	Arg	Lys	Gln	Ile 625	Leu	Phe	Pro	Glu	Lys 630
Ser	Glu	Asp	Phe	Arg 635	Glu	Asn	Ile	Phe	Gln 640		Asp	Asp	Glu	Gly 645

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Ala Glu Ile Arg Ser Leu Tyr Arg Gln Ser Leu Gln Val Gly Pro
Asp Ser Ala Ile Phe Arg Lys Phe Ile Leu Glu Lys Leu Glu Glu
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Ala Asn Thr Asp Pro Cys Ala Pro Pro Phe Asp Ser Leu Gln Thr
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Tyr Ala Phe Glu Gly Thr Gly Ser Leu Ala Gly Ser Leu Ser Ser
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Met Tyr Glu Gly Leu Trp Met Ser Cys Val Ser Gln Ser Thr Gly
50 55 60

Gln Ile Gln Cys Lys Val Phe Asp Ser Leu Leu Asn Leu Ser Ser 65 70 75

Thr Leu Gln Ala Thr Arg Ala Leu Met Val Val Gly Ile Leu Leu 80 85 90

Gly Val Ile Ala Ile Phe Val Ala Thr Val Gly Met Lys Cys Met 95 100 105

Lys Cys Leu Glu Asp Asp Glu Val Gln Lys Met Arg Met Ala Val 110 115 120

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Pro Met Thr Pro Val Asn Ala Arg Tyr Glu Phe Gly Gln Ala Leu 165

Phe Thr Gly Trp Ala Ala Ala Ala Ser Leu Cys Leu Leu Gly Gly Ala 170

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 gcatcctcct gggagtgata gcaatctttg tggccaccgt tggcatgaag 300
 tgtatgaagt gcttggaaga cgatgaggtg cagaagatga ggatggctgt 350
 cattgggggc gcgatatttc ttcttgcagg tctggctatt tnnngttgcc 400
 acagcatggt atggcaatag aatcgttcaa gaattctatg accctatgac 450
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cccagtcaat gccaggtacg aatttggtca ggctctcttc actggctggg 500
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ga 552
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<212> DNA
<213> Homo sapiens
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<221> unsure
<222> 25, 50, 60, 123, 127, 370, 395, 397-398, 402-403, 405-407
<223> unknown base
<400> 274
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 ccagtgcaaa gtctttgact ccttgctgaa tctgagcagc acattgcaag 200
 caacccgtgc cttgatgggg ttggcatcct cctgggagtg atagcaacct 250
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 gtgccagaag atgaggatgg ctgtcattgg gggcgcgata tttcttgttg 350
 caggtctggc tattttagtn gccacagcat ggtatggcaa tagantnntt 400
 cnngnnntct atgaccctat gaccccagtc aatgccaggt acgaatttgg 450
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<213> Homo sapiens
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<221> unsure
<222> 22, 61, 91, 144, 238-239, 262, 265-266, 271, 274
<223> unknown base
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 gcagcacatt ncaagcaacc cettgeettg aaggtggttg ncateceecc 100
 tgggagtgaa tagcaatctt tgtggccacc gttggcatga agtntatgaa 150
 gtgcttggaa gacgatgagg tgcagaagat gaggatggct gtcattgggg 200
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gegegatatt tettettgea ggtetggeta ttttagtnne cacageatgg 250 tatggeaata gnatnntteg nggnttetat gaccetatga ceccagteaa 300 tgecaggtae gaatttggte aggetetett cactggetgg getgetgett 350 etetetgeet tetgggaggt gecetaettt getgtteetg teecegaa 398

<210> 276

<211> 495

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 39, 58, 130, 234, 314, 364, 427, 450, 461, 476

<223> unknown base

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gagcagcaca ttgcaagcaa cccgtgcctt gatggtggtt ggcatcttcc 200

tgggagtgat agcaatcttt gtggccaccg tggnaatgaa gtgtatgaag 250

tgcttggaag acgatgaggt gcagaagatg aggatggctg tcattggggg 300

cgcgatattt cttnttgcag gtctggctat tttagttgcc acagcatggt 350

atggcaatag aatngttcaa gaattttatg accctatgac cccagtcaat 400

gccaggtacg aatttggtca ggcttnttc actggctgg ctgctgcttn 450

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<210> 277

<211> 200

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 34, 87, 138, 147, 163, 165-166, 172

<223> unknown base

<400> 277

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<211> 542
<212> DNA
<213> Homo sapiens
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<221> unsure
<222> 26, 43, 55, 77, 198, 361-362, 391-392, 396
<223> unknown base
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 aagtetttga eteettgetg aatetgagea geacattgea ageaacentg 200
 ccttgatggt ggttggcatc ctcctgggag tgatagcaat ctttgtggcc 250
 accgttggca tgaaagtgta tgaagtgctt ggaagacgat gaggtgcaga 300
 agatgaggat ggctgtcatt gggggcgcga tatttcttct tgcaggtctg 350
 gctattttag nngccacagc atggtatggc aatcagaccc nntcanaaac 400
 tctatgaccc tatgacccca gtcaatgcca ggtacgaatt tggtcaggct 450
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<211> 548
<212> DNA
<213> Homo sapiens
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<221> unsure
<222> 90, 115, 147, 228, 387
<223> unknown base
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 acaacatcgt gaccncccag gccatgtacg aggggctgtg gatgtcngcg 150
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 aatctgagca gcacattgca agcaaccntg ccttgatggt ggttggcatc 250
 ctcctgggag tgatagcaat ctttgtggcc accgttggca tgaagtgtat 300
 gaagtgcttg gaagacgatg aggtgcagaa gatgaggatg gctgtcattg 350
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<223> Synthetic oligonucleotide probe
<400> 280
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<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 281
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<210> 282
<211> 43
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 282
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<210> 283
<211> 2285
<212> DNA
<213> Homo sapiens
<400> 283
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 taaagcgggc gcagcattaa cgcttcccgc cccggtgacc tctcaggggt 200
 ctccccqcca aaqqtqctcc gccgctaagg aacatggcga aggtggagca 250
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<210> 284 <211> 243

<212> PRT

<213> Homo sapiens

<400> 284

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Leu Lys Phe Arg Gly Pro Phe Thr Asp Val Val Thr Thr Asn Leu 20 25 30

Lys Leu Gly Asn Pro Thr Asp Arg Asn Val Cys Phe Lys Val Lys 35 40 45

Thr Thr Ala Pro Arg Arg Tyr Cys Val Arg Pro Asn Ser Gly Ile
50 55 60

Ile Asp Ala Gly Ala Ser Ile Asn Val Ser Val Met Leu Gln Pro 65 70 75

Phe Asp Tyr Asp Pro Asn Glu Lys Ser Lys His Lys Phe Met Val 80 85 90

Gln Ser Met Phe Ala Pro Thr Asp Thr Ser Asp Met Glu Ala Val 95 100 105

Trp Lys Glu Ala Lys Pro Glu Asp Leu Met Asp Ser Lys Leu Arg 110 115 120

Cys Val Phe Glu Leu Pro Ala Glu Asn Asp Lys Pro His Asp Val 125 130 135

Glu Ile Asn Lys Ile Ile Ser Thr Thr Ala Ser Lys Thr Glu Thr 140 145 150

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Pro Ile Val Ser Lys Ser Leu Ser Ser Ser Leu Asp Asp Thr Glu
                155
Val Lys Lys Val Met Glu Glu Cys Lys Arg Leu Gln Gly Glu Val
                170
Gln Arg Leu Arg Glu Glu Asn Lys Gln Phe Lys Glu Glu Asp Gly
                                                         195
                                    190
Leu Arg Met Arg Lys Thr Val Gln Ser Asn Ser Pro Ile Ser Ala
                                                         210
Leu Ala Pro Thr Gly Lys Glu Glu Gly Leu Ser Thr Arg Leu Leu
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Ala Leu Val Val Leu Phe Phe Ile Val Gly Val Ile Ile Gly Lys
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                230
                                    235
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Ile Ala Leu

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<220>

<221> unsure

<222> 40, 53, 68, 119, 134, 177-178, 255

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<210> 286 <211> 543

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 73, 97

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<223> unknown base
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gtcccacgt ggcccactcc cggcccaggc tgctttccgt gtcttcagtt 200
ctgtccaagc catcagctcc ttgggactga tgaacagagt cagaagccca 250
aaggaattgc cactgtggca gcatcagacg tactcgtcat aagtgagagg 300
cgtgtgttga ctgattgacc cagcgctttg gaaataaatg gcagtgcttt 350
gttcacttaa agggaccaag ctaaattgta ttggttcatg tagtgaagtc 400
aaactgttat tcagagatgt ttaatgcata tttaacttat ttaatgtatt 450
tcatctcatg tttcttatt gtcacaagag taccgtaggg ctg 543
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- <210> 287 <211> 270
- <212> DNA
- <213> Homo sapiens
- <220>
- <221> unsure
- <222> 38, 64, 72, 164, 198, 200, 220, 222, 229, 242
- <223> unknown base

## <400> 287

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- <210> 288
- <211> 428
- <212> DNA
- <213> Homo sapiens
- <220>
- <221> unsure
- <222> 35, 116, 129, 197, 278, 294, 297, 349, 351
- <223> unknown base

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 gcactgtggc agcatnagac gtacttgtna taagtgagag gcgtgtgttg 150
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<210> 289
<211> 320
<212> DNA
<213> Homo sapiens
<400> 289
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 gaaataaatg gcagtgcttt gttcacttaa agggaccaag ctaaatttgt 200
 attggttcat gtagtgaagt caaactgtta ttcagagatg tttaatgcat 250
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<210> 290
<211> 609
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 57, 60, 186, 235, 244, 304, 339, 355, 359, 361, 387, 432, 441,
      447, 481, 513, 532, 584, 598
<223> unknown base
<400> 290
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 ttggtaggcc ttggtacatg atgctggatt acctctctta aaatgacacc 150
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cttcctcgcc tgttggtgct ggcccttggg gagctngagc ccagcatgct 200

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<210> 291

<211> 493

<212> DNA

<213> Homo sapiens

<400> 291
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atgtattca tctcatgttt tcttattgtc acaagagtac agttaatgct 400
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<210> 292

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 292

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<210> 293

<211> 23

<212> DNA

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<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 293
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<210> 294
<211> 50
<212> DNA
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<220>
<223> Synthetic oligonucleotide probe
<400> 294
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<210> 295
<211> 2530
<212> DNA
<213> Homo sapiens
<400> 295
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cttcacaaat tatgaatgat catgtgttga aagccacatt attttatgct 2350 atacattcta tgtatgaggt gctacatttt taggacaaag aattctgtaa 2400 tctttttcaa gaaagagtct ttttctcctt gacaaaatcc agcttttgta 2450 tgaggactat agggtgaatt ctctgattag taattttaga tatgtccttt 2500 cctaaaaatg aataaaattt atgaatatga 2530

<210> 296

<211> 413

<212> PRT

<213> Homo sapiens

<400> 296

Met Glu Asn Met Leu Leu Trp Leu Ile Phe Phe Thr Pro Gly Trp 1 5 10 15

Thr Leu Ile Asp Gly Ser Glu Met Glu Trp Asp Phe Met Trp His 20 25 30

Leu Arg Lys Val Pro Arg Ile Val Ser Glu Arg Thr Phe His Leu 35 40 45

Thr Ser Pro Ala Phe Glu Ala Asp Ala Lys Met Met Val Asn Thr
50 55 60

Val Cys Gly Ile Glu Cys Gln Lys Glu Leu Pro Thr Pro Ser Leu 65 70 75

Ser Glu Leu Glu Asp Tyr Leu Ser Tyr Glu Thr Val Phe Glu Asn 80 85 90

Gly Thr Arg Thr Leu Thr Arg Val Lys Val Gln Asp Leu Val Leu 95 100 105

Glu Pro Thr Gln Asn Ile Thr Thr Lys Gly Val Ser Val Arg Arg 110 115 120

Lys Arg Gln Val Tyr Gly Thr Asp Ser Arg Phe Ser Ile Leu Asp  $125 \hspace{1cm} 130 \hspace{1cm} 135$ 

Lys Arg Phe Leu Thr Asn Phe Pro Phe Ser Thr Ala Val Lys Leu 140 145 150

Ser Thr Gly Cys Ser Gly Ile Leu Ile Ser Pro Gln His Val Leu 155 160 165

Thr Ala Ala His Cys Val His Asp Gly Lys Asp Tyr Val Lys Gly
170 175 180

Ser Lys Lys Leu Arg Val Gly Leu Leu Lys Met Arg Asn Lys Ser 185 190 190

Gly Gly Lys Lys Arg Arg Gly Ser Lys Arg Ser Arg Arg Glu Ala 200 205 210

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Ser Gly Gly Asp Gln Arg Glu Gly Thr Arg Glu His Leu Gln Glu
Arg Ala Lys Gly Gly Arg Arg Lys Lys Ser Gly Arg Gly Gln
                 230
Arg Ile Ala Glu Gly Arg Pro Ser Phe Gln Trp Thr Arg Val Lys
                                     250
Asn Thr His Ile Pro Lys Gly Trp Ala Arg Gly Gly Met Gly Asp
Ala Thr Leu Asp Tyr Asp Tyr Ala Leu Leu Glu Leu Lys Arg Ala
His Lys Lys Lys Tyr Met Glu Leu Gly Ile Ser Pro Thr Ile Lys
 Lys Met Pro Gly Gly Met Ile His Phe Ser Gly Phe Asp Asn Asp
                                     310
 Arg Ala Asp Gln Leu Val Tyr Arg Phe Cys Ser Val Ser Asp Glu
                                     325
 Ser Asn Asp Leu Leu Tyr Gln Tyr Cys Asp Ala Glu Ser Gly Ser
                                     340
 Thr Gly Ser Gly Val Tyr Leu Arg Leu Lys Asp Pro Asp Lys Lys
                                     355
 Asn Trp Lys Arg Lys Ile Ile Ala Val Tyr Ser Gly His Gln Trp
 Val Asp Val His Gly Val Gln Lys Asp Tyr Asn Val Ala Val Arg
                                     385
 Ile Thr Pro Leu Lys Tyr Ala Gln Ile Cys Leu Trp Ile His Gly
                                     400
 Asn Asp Ala Asn Cys Ala Tyr Gly
                 410
<210> 297
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
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- <400> 297
- gcatctgcag gagagagcga aggg 24
- <210> 298
- <211> 24
- <212> DNA
- <213> Artificial Sequence

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<220>
<223> Synthetic oligonucleotide probe
<400> 298
catcgttccc gtgaatccag aggc 24
<210> 299
<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 299
gaagggaggc cttcctttca gtggacccgg gtcaagaata cccac 45
<210> 300
<211> 1869
<212> DNA
<213> Homo sapiens
<400> 300
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 tgtccgattc tgattccggc aaggatccaa gcatggaatg ctgccgtcgg 150
gcaactcctg gcacactgct cctctttctg gctttcctgc tcctgagttc 200
 caggaccqca cgctccqaqq aqqaccqqqa cqqcctatqq qatqcctqqq 250
gcccatggag tgaatqctca cqcacctqcq qqqqaqqqqc ctcctactct 300
 ctgaggcgct gcctgagcag caagagctgt gaaggaagaa atatccgata 350
cagaacatgc agtaatgtgg actgcccacc agaagcaggt gatttccgag 400
 ctcagcaatg ctcagctcat aatgatgtca agcaccatgg ccagttttat 450
gaatggette etgtgtetaa tgaeeetgae aacceatgtt caeteaagtg 500
ccaagccaaa qqaacaaccc tqqttqttqa actaqcacct aaqqtcttag 550
atggtacgcg ttgctataca gaatctttgg atatgtgcat cagtggttta 600
tgccaaattg ttggctqcga tcaccagctg ggaagcaccg tcaaggaaga 650
taactgtggg gtctgcaacg gagatgggtc cacctgccgg ctggtccgag 700
ggcagtataa atcccagctc tccgcaacca aatcggatga tactgtggtt 750
gcacttccct atggaagtag acatattcgc cttgtcttaa aaggtcctga 800
tcacttatat ctggaaacca aaaccctcca ggggactaaa ggtgaaaaca 850
gtctcagctc cacaggaact ttccttgtgg acaattctag tgtggacttc 900
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cagaaatttc cagacaaaga gatactgaga atggctggac cactcacagc 950 agatttcatt gtcaagattc gtaactcggg ctccgctgac agtacagtcc 1000 agttcatctt ctatcaaccc atcatccacc gatggaggga gacggatttc 1050 tttccttgct cagcaacctg tggaggaggt tatcagctga catcggctga 1100 gtgctacgat ctgaggagca accgtgtggt tgctgaccaa tactgtcact 1150 attacccaga gaacatcaaa cccaaaccca agcttcagga gtgcaacttg 1200 gatecttgte cagecagtga eggatacaag cagateatge ettatgacet 1250 ctaccatccc cttcctcggt gggaggccac cccatggacc gcgtgctcct 1300 cctcgtgtgg ggggggcatc cagagccggg cagtttcctg tgtggaggag 1350 gacatccagg ggcatgtcac ttcagtggaa gagtggaaat gcatgtacac 1400 ccctaagatg cccatcgcgc agccctgcaa catttttgac tgccctaaat 1450 ggctggcaca ggagtggtct ccgtgcacag tgacatgtgg ccagggcctc 1500 agataccgtg tggtcctctg catcgaccat cgaggaatgc acacaggagg 1550 ctgtagccca aaaacaaagc cccacataaa agaggaatgc atcgtaccca 1600 ctccctgcta taaacccaaa gagaaacttc cagtcgaggc caagttgcca 1650 tggttcaaac aagctcaaga gctagaagaa ggagctgctg tgtcagagga 1700 gccctcgtaa gttgtaaaag cacagactgt tctatatttg aaactgtttt 1750 gtttaaagaa agcagtgtct cactggttgt agctttcatg ggttctgaac 1800 taagtgtaat catctcacca aagctttttg gctctcaaat taaagattga 1850 ttagtttcaa aaaaaaaaa 1869

<210> 301

<211> 525

<212> PRT

<213> Homo sapiens

<400> 301

Met Glu Cys Cys Arg Arg Ala Thr Pro Gly Thr Leu Leu Phe
1 5 10 15

Leu Ala Phe Leu Leu Ser Ser Arg Thr Ala Arg Ser Glu Glu 20 25 30

Asp Arg Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp Ser Glu Cys 35 40 45

Ser Arg Thr Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg Arg Cys 50 55 60

Leu Ser Ser Lys Ser Cys Glu Gly Arg Asn Ile Arg Tyr Arg Thr Cys Ser Asn Val Asp Cys Pro Pro Glu Ala Gly Asp Phe Arg Ala Gln Gln Cys Ser Ala His Asn Asp Val Lys His His Gly Gln Phe 95 Tyr Glu Trp Leu Pro Val Ser Asn Asp Pro Asp Asn Pro Cys Ser Leu Lys Cys Gln Ala Lys Gly Thr Thr Leu Val Val Glu Leu Ala 130 Pro Lys Val Leu Asp Gly Thr Arg Cys Tyr Thr Glu Ser Leu Asp Met Cys Ile Ser Gly Leu Cys Gln Ile Val Gly Cys Asp His Gln Leu Gly Ser Thr Val Lys Glu Asp Asn Cys Gly Val Cys Asn Gly Asp Gly Ser Thr Cys Arg Leu Val Arg Gly Gln Tyr Lys Ser Gln Leu Ser Ala Thr Lys Ser Asp Asp Thr Val Val Ala Leu Pro Tyr 200 Gly Ser Arg His Ile Arg Leu Val Leu Lys Gly Pro Asp His Leu Tyr Leu Glu Thr Lys Thr Leu Gln Gly Thr Lys Gly Glu Asn Ser 230 Leu Ser Ser Thr Gly Thr Phe Leu Val Asp Asn Ser Ser Val Asp Phe Gln Lys Phe Pro Asp Lys Glu Ile Leu Arg Met Ala Gly Pro Leu Thr Ala Asp Phe Ile Val Lys Ile Arg Asn Ser Gly Ser Ala Asp Ser Thr Val Gln Phe Ile Phe Tyr Gln Pro Ile Ile His Arg 290 Trp Arg Glu Thr Asp Phe Phe Pro Cys Ser Ala Thr Cys Gly Gly Gly Tyr Gln Leu Thr Ser Ala Glu Cys Tyr Asp Leu Arg Ser Asn 320 Arg Val Val Ala Asp Gln Tyr Cys His Tyr Tyr Pro Glu Asn Ile Lys Pro Lys Pro Lys Leu Gln Glu Cys Asn Leu Asp Pro Cys Pro

350 355 360
Ala Ser Asp Gly Tyr Lys Gln Ile Met Pro Tyr Asp Leu Tyr His

365 370 Asp Leu Tyr His

Pro Leu Pro Arg Trp Glu Ala Thr Pro Trp Thr Ala Cys Ser Ser 380 385 390

Ser Cys Gly Gly Ile Gln Ser Arg Ala Val Ser Cys Val Glu 395 400 405

Glu Asp Ile Gln Gly His Val Thr Ser Val Glu Glu Trp Lys Cys 410 415 420

Met Tyr Thr Pro Lys Met Pro Ile Ala Gln Pro Cys Asn Ile Phe 425 430 435

Asp Cys Pro Lys Trp Leu Ala Gln Glu Trp Ser Pro Cys Thr Val 440 445 450

Thr Cys Gly Gln Gly Leu Arg Tyr Arg Val Val Leu Cys Ile Asp  $455 \hspace{1.5cm} 460 \hspace{1.5cm} 465$ 

His Arg Gly Met His Thr Gly Gly Cys Ser Pro Lys Thr Lys Pro 470 475 480

His Ile Lys Glu Glu Cys Ile Val Pro Thr Pro Cys Tyr Lys Pro 485 490 495

Lys Glu Lys Leu Pro Val Glu Ala Lys Leu Pro Trp Phe Lys Gln 500 505 510

Ala Gln Glu Leu Glu Glu Gly Ala Ala Val Ser Glu Glu Pro Ser 515 520 525

<210> 302

<211> 1533

<212> DNA

<213> Homo sapiens

<400> 302

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gctccaggaa gagcctaggc tggatgtctt gatcaataac gcagggatct 500 tocagtgccc ttacatgaag actgaagatg ggtttgagat gcagttcgga 550 gtgaaccatc tggggcactt tctactcacc aatcttctcc ttggactcct 600 caaaagttca gctcccagca ggattgtggt agtttcttcc aaactttata 650 aatacqqaqa catcaatttt qatgacttga acagtgaaca aagctataat 700 aaaagctttt gttatagccg gagcaaactg gctaacattc tttttaccag 750 ggaactagcc cgccgcttag aaggcacaaa tgtcaccgtc aatgtgttgc 800 atcctggtat tgtacggaca aatctgggga ggcacataca cattccactg 850 ttggtcaaac cactcttcaa tttggtgtca tgggcttttt tcaaaactcc 900 agtagaaggt gcccagactt ccatttattt ggcctcttca cctgaggtag 950 aaggagtgtc aggaagatac tttggggatt gtaaagagga agaactgttg 1000 cccaaagcta tggatgaatc tgttgcaaga aaactctggg atatcagtga 1050 agtgatggtt ggcctgctaa aataggaaca aggagtaaaa gagctgttta 1100 taaaactgca tatcagttat atctgtgatc aggaatggtg tggattgaga 1150 acttgttact tgaagaaaaa gaattttgat attggaatag cctgctaaga 1200 ggtacatgtg ggtattttgg agttactgaa aaattatttt tgggataaga 1250 gaatttcagc aaagatgttt taaatatata tagtaagtat aatgaataat 1300 aagtacaatg aaaaatacaa ttatattgta aaattataac tgggcaagca 1350 tggatgacat attaatattt gtcagaatta agtgactcaa agtgctatcg 1400 agaggttttt caagtatctt tgagtttcat ggccaaagtg ttaactagtt 1450 ttactacaat gtttggtgtt tgtgtggaaa ttatctgcct ggtgtgtgca 1500 cacaagtett acttggaata aatttactgg tac 1533

<210> 303

<211> 336

<212> PRT

<213> Homo sapiens

<400> 303

Met Ala Val Ala Thr Ala Ala Ala Val Leu Ala Ala Leu Gly Gly
1 5 10 15

Ala Leu Trp Leu Ala Ala Arg Arg Phe Val Gly Pro Arg Val Gln 20 25 30

Arg Leu Arg Arg Gly Gly Asp Pro Gly Leu Met His Gly Lys Thr 35 40 45

Val	Leu	Ile	Thr	Gly 50	Ala	Asn	Ser	Gly	Leu 55	Gly	Arg	Ala	Thr	Ala 60
Ala	Glu	Leu	Leu	Arg 65	Leu	Gly	Ala	Arg	Val 70	Ile	Met	Gly	Cys	Arg 75
Asp	Arg	Ala	Arg	Ala 80	Glu	Glu	Ala	Ala	Gly 85	Gln	Leu	Arg	Arg	Glu 90
Leu	Arg	Gln	Ala	Ala 95	Glu	Cys	Gly	Pro	Glu 100	Pro	Gly	Val	Ser	Gly 105
Val	Gly	Glu	Leu	Ile 110	Val	Arg	Glu	Leu	Asp 115	Leu	Ala	Ser	Leu	Arg 120
Ser	Val	Arg	Ala	Phe 125	Cys	Gln	Glu	Met	Leu 130	Gln	Glu	Glu	Pro	Arg 135
Leu	Asp	Val	Leu	Ile 140	Asn	Asn	Ala	Gly	Ile 145	Phe	Gln	Cys	Pro	Tyr 150
Met	Lys	Thr	Glu	Asp 155	Gly	Phe	Glu	Met	Gln 160	Phe	Gly	Val	Asn	His 165
Leu	Gly	His	Phe	Leu 170	Leu	Thr	Asn	Leu	Leu 175	Leu	Gly	Leu	Leu	Lys 180
Ser	Ser	Ala	Pro	Ser 185	Arg	Ile	Val	Val	Val 190	Ser	Ser	Lys	Leu	Tyr 195
Lys	Tyr	Gly	Asp	Ile 200	Asn	Phe	Asp	Asp	Leu 205	Asn	Ser	Glu	Gln	Ser 210
Tyr	Asn	Lys	Ser	Phe 215	Cys	Tyr	Ser	Arg	Ser 220	Lys	Leu	Ala	Asn	Ile 225
Leu	Phe	Thr	Arg	Glu 230	Leu	Ala	Arg	Arg	Leu 235	Glu	Gly	Thr	Asn	Val 240
Thr	Val	Asn	Val	Leu 245	His	Pro	Gly	Ile	Val 250	Arg	Thr	Asn	Leu	Gly 255
_				260					265					Leu 270
Val	Ser	Trp	Ala	Phe 275	Phe	Lys	Thr	Pro	Val 280	Glu	Gly	Ala	Gln	Thr 285
Ser	Ile	Tyr	Leu	Ala 290	Ser	Ser	Pro	Glu	Val 295	Glu	Gly	Val	Ser	300
Arg	Tyr	Phe	Gly	Asp 305	Cys	Lys	Glu	Glu	Glu 310	Leu	Leu	Pro	Lys	Ala 315
Met	Asp	Glu	Ser	Val 320	Ala	Arg	Lys	Leu	Trp 325	Asp	Ile	Ser	Glu	Val 330
Met	Val	Gly	Leu	Leu	Lys									

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<210> 304
<211> 521
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 20, 34, 62, 87, 221, 229
<223> unknown base
<400> 304
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 gcaagaaaat tntgggatat cagtgaagtg atggttngcc tgctaaaata 100
 ggaacaagga gtaaaagagc tgtttataaa actgcatatc agttatatct 150
 gtgatcagga atggtgtgga ttgagaactt gttacttgaa gaaaaagaat 200
 tttgatattg gaatagcctg ntaagaggna catgtgggta ttttggagtt 250
 actgaaaaat tatttttggg ataagagaat ttcagcaaag atgttttaaa 300
 tatatatagt aagtataatg aataataagt acaatgaaaa atacaattat 350
 attgtaaaat tataactggg caagcatgga tgacatatta atatttgtca 400
 gaattaagtg actcaaagtg ctatcgagag gtttttcaag tatctttgag 450
 tttcatggcc aaagtgttaa ctagttttac tacaatgttt ggtgtttgtg 500
 tggaaattat ctgcctggct t 521
<210> 305
<211> 24
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 305
ccaggaaatg ctccaggaag agcc 24
<210> 306
<211> 26
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 306
gcccatgaca ccaaattgaa gagtgg 26
<210> 307
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<211> 45
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 307
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<210> 308
<211> 1523
<212> DNA
<213> Homo sapiens
<400> 308
 gagaggacga ggtgccgctg cctggagaat cctccqctqc cqtcqqctcc 50
 cggagcccag ccctttccta acccaaccca acctagccca gtcccagccg 100
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 cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 200
 gggtttttac tcctgtaaca actgaaataa caagtcttgc tacagagaat 250
 atagatgaaa ttttaaacaa tgctgatgtt gctttagtaa atttttatgc 300
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 ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 400
agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 450
caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 500
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tgtgcctttc tttctgcatt tggggatgtt tcaaaaccgg aaagatatag 750
tggcgacaac ataatctaca aaccaccagg gcattctgct ccggatatgg 800
tgtacttggg agctatgaca aattttgatg tgacttacaa ttggattcaa 850
gataaatgtg ttcctcttgt ccgagaaata acatttgaaa atggagagga 900
attgacagaa gaaggactgc cttttctcat actctttcac atgaaagaag 950
atacagaaag tttagaaata ttccagaatg aagtagctcg qcaattaata 1000
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agtgaaaaag gtacaataaa ctttttacat gccgattgtg acaaatttag 1050

<210> 309

<211> 406

<212> PRT

<213> Homo sapiens

<400> 309

Met His Pro Ala Val Phe Leu Ser Leu Pro Asp Leu Arg Cys Ser 1 5 10 15

Leu Leu Leu Val Thr Trp Val Phe Thr Pro Val Thr Thr Glu
20 25 30

Ile Thr Ser Leu Ala Thr Glu Asn Ile Asp Glu Ile Leu Asn Asn 35 40 45

Ala Asp Val Ala Leu Val Asn Phe Tyr Ala Asp Trp Cys Arg Phe 50 55 60

Ser Gln Met Leu His Pro Ile Phe Glu Glu Ala Ser Asp Val Ile 65 70 75

Lys Glu Glu Phe Pro Asn Glu Asn Gln Val Val Phe Ala Arg Val 80 85 90

Asp Cys Asp Gln His Ser Asp Ile Ala Gln Arg Tyr Arg Ile Ser 95 100 105

Lys Tyr Pro Thr Leu Lys Leu Phe Arg Asn Gly Met Met Lys 110 115 120

Arg Glu Tyr Arg Gly Gln Arg Ser Val Lys Ala Leu Ala Asp Tyr 125 130 135

Ile Arg Gln Gln Lys Ser Asp Pro Ile Gln Glu Ile Arg Asp Leu 140 145 150

Ala Glu Ile Thr Thr Leu Asp Arg Ser Lys Arg Asn Ile Ile Gly 155 160 165

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Tyr Phe Glu Gln Lys Asp Ser Asp Asn Tyr Arg Val Phe Glu Arg
Val Ala Asn Ile Leu His Asp Asp Cys Ala Phe Leu Ser Ala Phe
                185
Gly Asp Val Ser Lys Pro Glu Arg Tyr Ser Gly Asp Asn Ile Ile
Tyr Lys Pro Pro Gly His Ser Ala Pro Asp Met Val Tyr Leu Gly
Ala Met Thr Asn Phe Asp Val Thr Tyr Asn Trp Ile Gln Asp Lys
Cys Val Pro Leu Val Arg Glu Ile Thr Phe Glu Asn Gly Glu Glu
                                    250
Leu Thr Glu Glu Gly Leu Pro Phe Leu Ile Leu Phe His Met Lys
Glu Asp Thr Glu Ser Leu Glu Ile Phe Gln Asn Glu Val Ala Arg
                275
Gln Leu Ile Ser Glu Lys Gly Thr Ile Asn Phe Leu His Ala Asp
                                    295
Cys Asp Lys Phe Arg His Pro Leu Leu His Ile Gln Lys Thr Pro
                305
                                     310
Ala Asp Cys Pro Val Ile Ala Ile Asp Ser Phe Arg His Met Tyr
                                     325
Val Phe Gly Asp Phe Lys Asp Val Leu Ile Pro Gly Lys Leu Lys
                335
Gln Phe Val Phe Asp Leu His Ser Gly Lys Leu His Arg Glu Phe
His His Gly Pro Asp Pro Thr Asp Thr Ala Pro Gly Glu Gln Ala
                                     370
                365
Gln Asp Val Ala Ser Ser Pro Pro Glu Ser Ser Phe Gln Lys Leu
                                     385
Ala Pro Ser Glu Tyr Arg Tyr Thr Leu Leu Arg Asp Arg Asp Glu
                395
                                     400
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Leu

<210> 310

<211> 182

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

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<222> 36, 48
<223> unknown base
<400> 310
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ttgtgatcag cactctgaca tagcccagag atacaggata agcaaatacc 100
 caaccctcaa attgtttcgt aatgggatga tgatgaagag agaatacagg 150
ggtcagcgat cagtgaaagc attggcagat ta 182
<210> 311
<211> 598
<212> DNA
<213> Homo sapiens
<220>
<221> unsure
<222> 38, 59, 140, 169, 174, 183, 282-283, 294-295, 319, 396
<223> unknown base
<400> 311
 agaggeetet etggaagttg teeegggtgt tegeegengg ageeegggte 50
 gagaggacna ggtgccgctg cctggagaat cctccgctgc cgtcggctcc 100
 cggagcccag ccctttccta acccaaccca acctagcccn gtcccagccg 150
 ccagcgcctg tccctgtcnc ggancccagc gtnaccatgc atcctgccgt 200
 cttcctatcc ttacccgacc tcagatgctc ccttctgctc ctggtaactt 250
 gggtttttac tcctgtaaca actgaaataa cnngtcttga tacnnagaat 300
 atagatgaaa ttttaaacna tgctgatgtg gctttagtca atttttatgc 350
 tgactggtgt cgtttcagtc agatgtggca tccaattttt gaggangctt 400
 ccgatgtcat taaggaagaa tttccaaatg aaaatcaagt agtgtttgcc 450
 agagttgatt gtgatcagca ctctgacata gcccagagat acaggataag 500
 caaataccca accctcaaat tgtttcgtaa tgggatgatg atgaagagag 550
 aatacagggg tcagcgatca gtgaaagcat tggcagatta catcaggc 598
<210> 312
<211> 22
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 312
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tgagaggcct ctctggaagt tg 22

<212> DNA

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<210> 313
<211> 19
<212> DNA
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ccagaatgaa gtagctcggc 20
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catttggcag gaattgtcc 19
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<211> 1333
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<213> Homo sapiens
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 gcatttgatg agctgaagac tgattacaag aatcctatag accagtgtaa 150
 taccctgaat ccccttgtac tcccagagta cctcatccac gctttcttct 200
 gtgtcatgtt tctttgtgca gcagagtggc ttacactggg tctcaatatg 250
 cccctcttgg catatcatat ttggaggtat atgagtagac cagtgatgag 300
 tggcccagga ctctatgacc ctacaaccat catgaatgca gatattctag 350
 catattqtca qaaggaagga tggtgcaaat tagcttttta tcttctagca 400
 tttttttact acctatatgg catgatctat gttttggtga gctcttagaa 450
 caacacacag aagaattggt ccagttaagt gcatgcaaaa agccaccaaa 500
 tgaagggatt ctatccagca agatcctgtc caagagtagc ctgtggaatc 550
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tgatcagtta ctttaaaaaa tgactcctta ttttttaaat gtttccacat 600 ttttgcttgt ggaaagactg ttttcatatg ttatactcag ataaagattt 650 taaatggtat tacgtataaa ttaatataaa atgattacct ctggtgttga 700 caggtttgaa cttgcacttc ttaaggaaca gccataatcc tctgaatgat 750 gcattaatta ctgactgtcc tagtacattg gaagcttttg tttataggaa 800 cttgtagggc tcattttggt ttcattgaaa cagtatctaa ttataaatta 850 gctgtagata tcaggtgctt ctgatgaagt gaaaatgtat atctgactag 900 tgggaaactt catgggtttc ctcatctgtc atgtcgatga ttatatatgg 950 atacatttac aaaaataaaa agcgggaatt ttcccttcgc ttgaatatta 1000 tecetgtata ttgcatgaat gagagattte ceatatttee atcagagtaa 1050 taaatatact tgctttaatt cttaagcata agtaaacatg atataaaaat 1100 atatgctgaa ttacttgtga agaatgcatt taaagctatt ttaaatgtgt 1150 ttttatttgt aagacattac ttattaagaa attggttatt atgcttactg 1200 ttctaatctg qtqqtaaaqq tattcttaag aatttgcagg tactacagat 1250 tttcaaaact qaatqaqaqa aaattgtata accatcctgc tgttccttta 1300 gtgcaataca ataaaactct gaaattaaga ctc 1333

<210> 322

<211> 144

<212> PRT

<213> Homo sapiens

<400> 322

Met Ala Phe Thr Phe Ala Ala Phe Cys Tyr Met Leu Ala Leu Leu 1 5 10 15

Leu Thr Ala Ala Leu Ile Phe Phe Ala Ile Trp His Ile Ile Ala 20 25 30

Phe Asp Glu Leu Lys Thr Asp Tyr Lys Asn Pro Ile Asp Gln Cys 35 40 45

Asn Thr Leu Asn Pro Leu Val Leu Pro Glu Tyr Leu Ile His Ala 50 55 60

Phe Phe Cys Val Met Phe Leu Cys Ala Ala Glu Trp Leu Thr Leu  $\phantom{0}65\phantom{0}$  70  $\phantom{0}75\phantom{0}$ 

Gly Leu Asn Met Pro Leu Leu Ala Tyr His Ile Trp Arg Tyr Met 80 85 90

Ser Arg Pro Val Met Ser Gly Pro Gly Leu Tyr Asp Pro Thr Thr 95 100 105

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Ile Met Asn Ala Asp Ile Leu Ala Tyr Cys Gln Lys Glu Gly Trp
                 110
Cys Lys Leu Ala Phe Tyr Leu Leu Ala Phe Phe Tyr Tyr Leu Tyr
                 125
                                     130
Gly Met Ile Tyr Val Leu Val Ser Ser
                 140
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<211> 477
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 atatgcccct cttggcatat catatttgga ggtatatgag tagaccagtg 200
 atgagtggcc caggactcta tgaccctaca accatcatga atgcagatat 250
 tctagcatat tgtcagaagg aaggatggtg caaattagct ttttatcttc 300
 tagcattttt ttactaccta tatggcatga tctatgtttt ggtgagctct 350
 tagaacaaca cacagaagaa ttggtccagt taagtgcatg caaaaagcca 400
 ccaaatgaag ggattctatc cagcaagatc ctgtccaaga gtagcctgtg 450
 qaatctgatc agttacttta aaaaatg 477
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<211> 43
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217

<223> Synthetic oligonucleotide probe

<400> 325

<210> 326

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<223> Synthetic oligonucleotide probe
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actggaccaa ttcttctgtg 20
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 tgtgacagag gggaacaaga tggcggcgcc gaaggggagc ctctgggtga 100
 ggacccaact ggggctcccg ccgctgctgc tgctgaccat ggccttggcc 150
 ggaggttcgg ggaccgcttc ggctgaagca tttgactcgg tcttgggtga 200
 tacggcgtct tgccaccggg cctgtcagtt gacctacccc ttgcacacct 250
 accctaagga agaggagttg tacgcatgtc agagaggttg caggctgttt 300
 tcaatttgtc agtttgtgga tgatggaatt gacttaaatc gaactaaatt 350
 ggaatgtgaa tctgcatgta cagaagcata ttcccaatct gatgagcaat 400
 atgcttgcca tcttggttgc cagaatcagc tgccattcgc tgaactgaga 450
 caagaacaac ttatgtccct gatgccaaaa atgcacctac tctttcctct 500
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aactotggtg aggtcattot ggagtgacat gatggactoc gcacagagct 550 toataacoto ttoatggact tittatotto aagcogatga oggaaaaata 600 gttatattoc agtotaagco agaaatocag tacgcaccac atttggagca 650 ggagcotaca aatttgagag aatcatotot aagcaaaatg tootatotgo 700 aaatgagaaa ttoacaagcg cacaggaatt ttottgaaga tggagaaagt 750 gatggottit taagatgoot otototaac totgggtgga tittaactac 800 aactottgto ototoggag tggtattgot ttggattigt tgtgcaactg 850 ttgctacago tgtggagcag tatgitocot otgagaaget gagtatotat 900 ggtgacttgg agtitatgaa tgaacaaaag otaaacagat atccagotto 950 ttotottgig gitgitagat otaaacaga agatcatgaa gaagcagggo 1000 ototocotaccac aaaagtgaat ottgotoat otgaaatta agcattito 1050 tittaaaaag otaatgg atatggoot taagaacto ototootoo ototoo aactotigg attoo otaacaactaa aattoo ototoo ototo

<210> 330

<211> 323

<212> PRT

<213> Homo sapiens

<400> 330

Met Ala Ala Pro Lys Gly Ser Leu Trp Val Arg Thr Gln Leu Gly
1 5 10 15

Leu Pro Pro Leu Leu Leu Thr Met Ala Leu Ala Gly Gly Ser 20 25 30

Gly Thr Ala Ser Ala Glu Ala Phe Asp Ser Val Leu Gly Asp Thr 35 40 45

Ala Ser Cys His Arg Ala Cys Gln Leu Thr Tyr Pro Leu His Thr 50 55 60

Tyr Pro Lys Glu Glu Glu Leu Tyr Ala Cys Gln Arg Gly Cys Arg
65 70 75

Leu Phe Ser Ile Cys Gln Phe Val Asp Asp Gly Ile Asp Leu Asn 80 85 90

Arg Thr Lys Leu Glu Cys Glu Ser Ala Cys Thr Glu Ala Tyr Ser 95 100 105

Gln Ser Asp Glu Gln Tyr Ala Cys His Leu Gly Cys Gln Asn Gln 110 115 120

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Leu Pro Phe Ala Glu Leu Arg Gln Glu Gln Leu Met Ser Leu Met
Pro Lys Met His Leu Leu Phe Pro Leu Thr Leu Val Arg Ser Phe
                                    145
                140
Trp Ser Asp Met Met Asp Ser Ala Gln Ser Phe Ile Thr Ser Ser
Trp Thr Phe Tyr Leu Gln Ala Asp Asp Gly Lys Ile Val Ile Phe
                                                         180
Gln Ser Lys Pro Glu Ile Gln Tyr Ala Pro His Leu Glu Gln Glu
Pro Thr Asn Leu Arg Glu Ser Ser Leu Ser Lys Met Ser Tyr Leu
                                    205
                                                         210
                200
Gln Met Arg Asn Ser Gln Ala His Arg Asn Phe Leu Glu Asp Gly
                                    220
Glu Ser Asp Gly Phe Leu Arg Cys Leu Ser Leu Asn Ser Gly Trp
                                                         240
                                    235
Ile Leu Thr Thr Thr Leu Val Leu Ser Val Met Val Leu Leu Trp
                                     250
Ile Cys Cys Ala Thr Val Ala Thr Ala Val Glu Gln Tyr Val Pro
                                     265
Ser Glu Lys Leu Ser Ile Tyr Gly Asp Leu Glu Phe Met Asn Glu
                                     280
Gln Lys Leu Asn Arg Tyr Pro Ala Ser Ser Leu Val Val Arg
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                290
Ser Lys Thr Glu Asp His Glu Glu Ala Gly Pro Leu Pro Thr Lys
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Val Asn Leu Ala His Ser Glu Ile
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<210> 331

<211> 350

<212> DNA

<213> Homo sapiens

320

<400> 331

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<213> Homo sapiens
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<223> unknown base
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 cqaaqqqaqc ctttgggtga ggacccaact ggggctcccg ccgctgctgc 150
 tgctgaccat ggccttggcc ggaggttcgg ggaccgcttc ggctgaagca 200
 tttgactcgg tcttgggtga tacggcgtct tgccaccggg cctgtcagtt 250
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 agagaggttg caggctgttt tcaatttgtc agtttgtgga tgatggaatt 350
 gacttaaatc gaactaaatt ggaatgtgaa tctgcatgta cagaagcata 400
 ttcccaatct gatgagcaat atgcttgcca tcttggttgc cagaatcagc 450
 tgccattcgc tgaactgaga caagaacaac ttatgtccct gatgccaaaa 500
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 gatggactcc gc 562
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<213> Artificial Sequence
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<210> 335
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<400> 335
atgqccttgg ccggaggttc ggggaccgct tcggctgaag 40
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 cggcccggag gtggggcgc gctggggccg gcccgcacgg gcttcatctg 100
 agggcgcacg gcccgcgacc gagcgtgcgg actggcctcc caagcgtggg 150
 gcgacaagct gccggagctg caatgggccg cggctgggga ttcttgtttg 200
 gcctcctggg cgccgtgtgg ctgctcagct cgggccacgg agaggagcag 250
 cccccggaga cagcggcaca gaggtgcttc tgccaggtta gtggttactt 300
 ggatgattgt acctgtgatg ttgaaaccat tgatagattt aataactaca 350
 ggcttttccc aagactacaa aaacttcttg aaagtgacta ctttaggtat 400
 tacaaggtaa acctgaagag gccgtgtcct ttctggaatg acatcagcca 450
 gtgtggaaga agggactgtg ctgtcaaacc atgtcaatct gatgaagttc 500
 ctgatggaat taaatctgcg agctacaagt attctgaaga agccaataat 550
 ctcattgaag aatgtgaaca agctgaacga cttggagcag tggatgaatc 600
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 attcttcaga taacttctgt gaagctgatg acattcagtc ccctgaagct 700
 gaatatgtag atttgcttct taatcctgag cgctacactg gttacaaggg 750
 accagatgct tggaaaatat ggaatgtcat ctacgaagaa aactgtttta 800
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 acaagtgaag agaacacttt ttacagttgg ctagaaggtc tctgtgtaga 900
 aaaaagagca ttctacagac ttatatctgg cctacatgca agcattaatg 950
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<210> 337

<211> 468

<212> PRT

<213> Homo sapiens

<400> 337

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Trp Leu Leu Ser Ser Gly His Gly Glu Glu Gln Pro Pro Glu Thr 20 25 30

Ala Ala Gln Arg Cys Phe Cys Gln Val Ser Gly Tyr Leu Asp Asp 35 40 45

Cys Thr Cys Asp Val Glu Thr Ile Asp Arg Phe Asn Asn Tyr Arg 50~ 55~ 60  $\,$ 

Leu Phe Pro Arg Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg 65 70 75

Tyr	Tyr	Lys	Val	Asn 80	Leu	Lys	Arg	Pro	Cys 85	Pro	Phe	Trp	Asn	Asp 90
Ile	Ser	Gln	Cys	Gly 95	Arg	Arg	Asp	Cys	Ala 100	Val	Lys	Pro	Cys	Gln 105
Ser	Asp	Glu	Val	Pro 110	Asp	Gly	Ile	Lys	Ser 115	Ala	Ser	Tyr	Lys	Tyr 120
Ser	Glu	Glu	Ala	Asn 125	Asn	Leu	Ile	Glu	Glu 130	Cys	Glu	Gln	Ala	Glu 135
Arg	Leu	Gly	Ala	Val 140	Asp	Glu	Ser	Leu	Ser 145	Glu	Glu	Thr	Gln	Lys 150
Ala	Val	Leu	Gln	Trp 155	Thr	Lys	His	Asp	Asp 160	Ser	Ser	Asp	Asn	Phe 165
Cys	Glu	Ala	Asp	Asp 170	Ile	Gln	Ser	Pro	Glu 175	Ala	Glu	Tyr	Val	Asp 180
Leu	Leu	Leu	Asn	Pro 185	Glu	Arg	Tyr	Thr	Gly 190	Tyr	Lys	Gly	Pro	Asp 195
Ala	Trp	Lys	Ile	Trp 200	Asn	Val	Ile	Tyr	Glu 205	Glu	Asn	Cys	Phe	Lys 210
Pro	Gln	Thr	Ile	Lys 215	Arg	Pro	Leu	Asn	Pro 220	Leu	Ala	Ser	Gly	Gln 225
Gly	Thr	Ser	Glu	Glu 230	Asn	Thr	Phe	Tyr	Ser 235	Trp	Leu	Glu	Gly	Leu 240
Суѕ	Val	Glu	Lys	Arg 245	Ala	Phe	Tyr	Arg	Leu 250	Ile	Ser	Gly	Leu	His 255
Ala	Ser	Ile	Asn	Val 260	His	Leu	Ser	Ala	Arg 265	Tyr	Leu	Leu	Gln	Glu 270
Thr	Trp	Leu	Glu	Lys 275	Lys	Trp	Gly	His	Asn 280	Ile	Thr	Glu	Phe	Gln 285
Gln	Arg	Phe	Asp	Gly 290	Ile	Leu	Thr	Glu	Gly 295	Glu	Gly	Pro	Arg	Arg 300
Leu	Lys	Asn	Leu	Tyr 305	Phe	Leu	Tyr	Leu	Ile 310	Glu	Leu	Arg	Ala	Leu 315
Ser	Lys	Val	Leu	Pro 320	Phe	Phe	Glu	Arg	Pro 325	Asp	Phe	Gln	Leu	Phe 330
Thr	Gly	Asn	Lys	Ile 335	Gln	Asp	Glu	Glu	Asn 340	Lys	Met	Leu	Leu	Leu 345
Glu	Ile	Leu	His	Glu 350	Ile	Lys	Ser	Phe	Pro 355	Leu	His	Phe	Asp	Glu 360
Asn	Ser	Phe	Phe	Ala	Gly	Asp	Lys	Lys	Glu	Ala	His	Lys	Leu	Lys

370 375 365 Glu Asp Phe Arg Leu His Phe Arg Asn Ile Ser Arg Ile Met Asp 380 Cys Val Gly Cys Phe Lys Cys Arg Leu Trp Gly Lys Leu Gln Thr 400 Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe Ser Glu Lys Leu 415 410 Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu Phe His Leu 435 430 Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly Arg Ile Ser Thr Ser Val Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu Gln 465 455 Asn Ile His <210> 338 <211> 507 <212> DNA <213> Homo sapiens <220> <221> unsure <222> 101, 263, 376, 397, 426 <223> unknown base <400> 338 gctggaaata tggatgtcat ctacgagaaa ctgttttaag ccacagacaa 50 ttaaaagacc tttaaatcct ttggcttctg gtcaagggac aagtgaagag 100 nacacttttt acagttggct agaaggtctc tgtgtagaaa aaagagcatt 150 ctacagactt atatctggcc tacatgcaag cattaatgtg catttgagtg 200 caagatatct tttacaagag acctggttag aaaagaaatg gggacacaac 250 attacagaat ttnaacagcg atttgatgga attttgactg aaggagaagg 300 tccaagaagg cttaagaact tgtattttct ctacttaata gaactaaggg 350 ctttatccaa agtgttacca ttcttngagc gcccagattt tcaactnttt 400 actggaaata aaattcagga tgaggnaaac aaaatgttac ttttggaaat 450 acttcatgaa atcaagtcat ttcctttgca ttttgatgag aattcatttt 500

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tttgctg 507

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<210> 341
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aaaggaggac tttcgactgc 20
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 agagattcat ccactgctcc aagtcg 26
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  ggaettetea tactggaeag aaacegatea ggeatggaae teeeettegt 150
  eacteacetg ttettgeeee tggtgtteet gaeaggtete tgeteeeeet 200
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<211> 124

<212> PRT

<213> Homo sapiens

<400> 346

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20 25 30

Arg Leu Phe Pro Gly Pro Pro Glu Ala Glu Phe Gly Tyr Ser Val 35 40 45

Leu Gln His Val Gly Gly Gln Arg Trp Met Leu Val Gly Ala 50 55 60

Pro Trp Asp Gly Pro Ser Gly Asp Arg Arg Gly Asp Val Tyr Arg 65 70 75

Cys Pro Val Gly Gly Ala His Asn Ala Pro Cys Ala Lys Gly His 80 85 90

Leu Gly Asp Tyr Gln Leu Gly Asn Ser Ser His Pro Ala Val Asn  $95 \hspace{1.5cm} 100 \hspace{1.5cm} 105$ 

Met His Leu Gly Met Ser Leu Leu Glu Thr Asp Gly Asp Gly Gly 110 115 120

Phe Met Val Ser

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<211> 509

<212> DNA

<213> Homo sapiens

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<221> unsure

<222> 22

<223> unknown base

<400> 347

<212> DNA

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<211> 311

<212> PRT

<213> Homo sapiens

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Glu Val Ala Ile Leu Pro Ala Pro Gln Asn Leu Ser Val Leu Ser 35 40 45

Thr Asn Met Lys His Leu Leu Met Trp Ser Pro Val Ile Ala Pro 50 55 60

Gly Glu Thr Val Tyr Tyr Ser Val Glu Tyr Gln Gly Glu Tyr Glu
65 70 75

Ser Leu Tyr Thr Ser His Ile Trp Ile Pro Ser Ser Trp Cys Ser 80 85 90

Leu Thr Glu Gly Pro Glu Cys Asp Val Thr Asp Asp Ile Thr Ala 95 100 105

Thr Val Pro Tyr Asn Leu Arg Val Arg Ala Thr Leu Gly Ser Gln
110 115 120

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Thr Ile Leu Thr Arg Pro Gly Met Glu Ile Thr Lys Asp Gly Phe
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His Leu Val Ile Glu Leu Glu Asp Leu Gly Pro Gln Phe Glu Phe
Leu Val Ala Tyr Trp Arg Arg Glu Pro Gly Ala Glu Glu His Val
Lys Met Val Arg Ser Gly Gly Ile Pro Val His Leu Glu Thr Met
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Glu Pro Gly Ala Ala Tyr Cys Val Lys Ala Gln Thr Phe Val Lys
                                                         210
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Ala Ile Gly Arg Tyr Ser Ala Phe Ser Gln Thr Glu Cys Val Glu
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Val Gln Gly Glu Ala Ile Pro Leu Val Leu Ala Leu Phe Ala Phe
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Val Gly Phe Met Leu Ile Leu Val Val Val Pro Leu Phe Val Trp
                245
Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val Val
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<213> Homo sapiens

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<223> unknown base

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<213> Homo sapiens

<400> 358

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Val Pro Gly Pro Pro Phe Trp Gly Leu Val Asn Ala Ala Trp Ser 50 55 60

Leu Cys Ala Val Gly Lys Arg Gln Ser Pro Val Asp Val Glu Leu 65 70 75

Lys Arg Val Leu Tyr Asp Pro Phe Leu Pro Pro Leu Arg Leu Ser 80 85 90

Thr Gly Gly Glu Lys Leu Arg Gly Thr Leu Tyr Asn Thr Gly Arg 95 100 105

His Val Ser Phe Leu Pro Ala Pro Arg Pro Val Val Asn Val Ser 110 115 120

Gly Gly Pro Leu Leu Tyr Ser His Arg Leu Ser Glu Leu Arg Leu 125 130 1,35

Leu Phe Gly Ala Arg Asp Gly Ala Gly Ser Glu His Gln Ile Asn 140 145 150

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<211> 3038
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Trp Pro Lys A	Ala Val Tyr 200	Leu Val	Cys Asn 205		Pro Lys	Gly 210
Asn Trp Trp (	Gly His Ala 215	Pro Tyr	Lys His 220	Gly Arg	Pro Cys	Ser 225
Ala Cys Pro I	Pro Ser Phe 230	Gly Gly	Gly Cys 235		Asn Leu	Cys 240
Tyr Lys Glu (	Gly Ser Asp 245	Arg Tyr	Tyr Pro 250		Glu Glu	Glu 255
Thr Asn Glu	Ile Glu Arg 260	Gln Gln	Ser Gln 265		Asp Thr	His 270
Val Arg Thr A	Arg Ser Asp 275	Asp Ser	Ser Arg 280		Val Ile	Ser 285
Ala Gln Gln N	Met Ser Gln 290	Ile Val	Ser Cys 295		Arg Leu	Arg 300
Asp Gln Cys I	Lys Gly Thr 305	Thr Cys	Asn Arg 310		Cys Pro	Ala 315
Gly Cys Leu A	Asp Ser Lys 320	Ala Lys	Val Ile 325		Val His	Tyr 330
Glu Met Gln S	Ser Ser Ile 335	Cys Arg	Ala Ala 340		Tyr Gly	Ile 345
Ile Asp Asn A	Asp Gly Gly 350	Trp Val	Asp Ile 355		Gln Gly	Arg 360
Lys His Tyr I	Phe Ile Lys 365	Ser Asn	Arg Asn 370	_	Gln Thr	Ile 375
Gly Lys Tyr (	Gln Ser Ala 380	Asn Ser	Phe Thr 385	Val Ser	Lys Val	Thr 390
Val Gln Ala V	Val Thr Cys 395	Glu Thr	Thr Val		Leu Cys	Pro 405
Phe His Lys I	Pro Ala Ser 410	His Cys	Pro Arg 415		Cys Pro	Arg 420
Asn Cys Met (	Gln Ala Asn 425	Pro His	Tyr Ala 430		Ile Gly	Thr 435
Arg Val Tyr S	Ser Asp Leu 440	Ser Ser	Ile Cys 445		Ala Val	His 450
Ala Gly Val V	Val Arg Asn 455	His Gly	Gly Tyr 460		Val Met	Pro 465

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Val Asp Lys Arg Lys Thr Tyr Ile Ala Ser Phe Gln Asn Gly Ile
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Val Phe Ala Val Val
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<213> Homo sapiens

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Arg Val Asp Gly Ser Lys Cys Lys Cys Ser Arg Lys Gly Pro Lys 35 40 45

Ile Arg Tyr Ser Asp Val Lys Lys Leu Glu Met Lys Pro Lys Tyr
50 55 60

Pro His Cys Glu Glu Lys Met Val Ile Ile Thr Thr Lys Ser Val 65 70 75

Ser Arg Tyr Arg Gly Gln Glu His Cys Leu His Pro Lys Leu Gln 80 85 90

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Thr Asn Tyr Gly Lys Ile Arg Gly Leu Arg Thr Pro Leu Pro Asn 35 40 45

Glu Ile Leu Gly Pro Val Glu Gln Tyr Leu Gly Val Pro Tyr Ala

50 55 60

Ser Pro Pro Thr Gly Glu Arg Arg Phe Gln Pro Pro Glu Pro Pro

Ser Ser Trp Thr Gly Ile Arg Asn Thr Thr Gln Phe Ala Ala Val

Cys Pro Gln His Leu Asp Glu Arg Ser Leu Leu His Asp Met Leu 95 100 105

Pro Ile Trp Phe Thr Ala Asn Leu Asp Thr Leu Met Thr Tyr Val 110 115 120

Gln Asp Gln Asn Glu Asp Cys Leu Tyr Leu Asn Ile Tyr Val Pro 125 130 135

Thr Glu Asp Gly Ala Asn Thr Lys Lys Asn Ala Asp Asp Ile Thr 140 145 150

Ser Asn Asp Arg Gly Glu Asp Glu Asp Ile His Asp Gln Asn Ser 155 160 165

Lys Lys Pro Val Met Val Tyr Ile His Gly Gly Ser Tyr Met Glu 170 175 180

Gly Thr Gly Asn Met Ile Asp Gly Ser Ile Leu Ala Ser Tyr Gly 185 190 195

Asn Val Ile Val Ile Thr Ile Asn Tyr Arg Leu Gly Ile Leu Gly 200 205 210

Phe Leu Ser Thr Gly Asp Gln Ala Ala Lys Gly Asn Tyr Gly Leu 215 220 225

Leu Asp Gln Ile Gln Ala Leu Arg Trp Ile Glu Glu Asn Val Gly 230 235 240

Ala Phe Gly Gly Asp Pro Lys Arg Val Thr Ile Phe Gly Ser Gly 245 250

Ala Gly Ala Ser Cys Val Ser Leu Leu Thr Leu Ser His Tyr Ser 260 265 270

Glu Gly Leu Phe Gln Lys Ala Ile Ile Gln Ser Gly Thr Ala Leu 275 280 285

Ser Ser Trp Ala Val Asn Tyr Gln Pro Ala Lys Tyr Thr Arg Ile 290 295 300

Leu Ala Asp Lys Val Gly Cys Asn Met Leu Asp Thr Thr Asp Met 305 310

Val Glu Cys Leu Arg Asn Lys Asn Tyr Lys Glu Leu Ile Gln Gln 320 325 330

Thr Ile Thr Pro Ala Thr Tyr His Ile Ala Phe Gly Pro Val Ile 335 340 345

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Glu	Gly	Leu	Lys	Phe 380	Val	Asp	Gly	Ile	Val 385	Asp	Asn	Glu	Asp	Gly 390
Val	Thr	Pro	Asn	Asp 395	Phe	Asp	Phe	Ser	Val 400	Ser	Asn	Phe	Val	Asp 405
Asn	Leu	Tyr	Gly	Tyr 410	Pro	Glu	Gly	Lys	Asp 415	Thr	Leu	Arg	Glu	Thr 420
Ile	Lys	Phe	Met	Tyr 425	Thr	Asp	Trp	Ala	Asp 430	Lys	Glu	Asn	Pro	Glu 435
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Val	Ala	Pro	Ala	Val 455	Ala	Ala	Asp	Leu	His 460	Ala	Gln	Tyr	Gly	Ser 465
Pro	Thr	Tyr	Phe	Tyr 470	Ala	Phe	Tyr	His	His 475	Cys	Gln	Ser	Glu	Met 480
Lys	Pro	Ser	Trp	Ala 485	Asp	Ser	Ala	His	Gly 490	Asp	Glu	Val	Pro	Tyr 495
Val	Phe	Gly	Ile	Pro 500	Met	Ile	Gly	Pro	Thr 505	Glu	Leu	Phe	Ser	Cys 510
Asn	Phe	Ser	Lys	Asn 515	Asp	Val	Met	Leu	Ser 520	Ala	Val	Val	Met	Thr 525
Tyr	Trp	Thr	Asn	Phe 530	Ala	Lys	Thr	Gly	Asp 535	Pro	Asn	Gln	Pro	Val 540
Pro	Gln	Asp	Thr	Lys 545	Phe	Ile	His	Thr	Lys 550	Pro	Asn	Arg	Phe	Glu 555
Glu	Val	Ala	Trp	Ser 560	Lys	Tyr	Asn	Pro	Lys 565		Gln	Leu	Tyr	Leu 570
His	Ile	Gly	Leu	Lys 575	Pro	Arg	Val	Arg	Asp 580		Tyr	Arg	Ala	Thr 585
Lys	Val	Ala	Phe	Trp 590	Leu	Glu	Leu	Val	Pro 595	His	Leu	His	Asn	Leu 600
Asn	Glu	Ile	Phe	Gln 605		Val	Ser	Thr	Thr 610		Lys	Val	Pro	Pro 615
Pro	Asp	Met	Thr	Ser 620		Pro	Tyr	Gly	Thr 625	Arg	Arg	Ser	Pro	Ala 630
Lys	Ile	Trp	Pro	Thr	Thr	Lys	Arg	Pro	Ala	Ile	Thr	Pro	Ala	Asn

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Thr Th	r Val	Leu	Ile 665	Glu	Thr	Lys	Arg	Asp 670	Tyr	Ser	Thr	Glu	Leu 675
Ser Va	l Thr	Ile	Ala 680	Val	Gly	Ala	Ser	Leu 685	Leu	Phe	Leu	Asn	Ile 690
Leu Al	a Phe	Ala	Ala 695	Leu	Tyr	Tyr	Lys	Lys 700	Asp	Lys	Arg	Arg	His 705
Glu Th	r His	Arg	Arg 710	Pro	Ser	Pro	Gln	Arg 715	Asn	Thr	Thr	Asn	Asp 720
Ile Al	a His	Ile	Gln 725	Asn	Glu	Glu	Ile	Met 730	Ser	Leu	Gln	Met	Lys 735
Gln Le	eu Glu	His	Asp 740	His	Glu	Cys	Glu	Ser 745	Leu	Gln	Ala	His	Asp 750
Thr Le	eu Arg	Leu	Thr 755	Cys	Pro	Pro	Asp	Tyr 760	Thr	Leu	Thr	Leu	Arg 765
Arg Se	er Pro	Asp	Asp 770	Ile	Pro	Leu	Met	Thr 775	Pro	Asn	Thr	Ile	Thr 780
Met I	le Pro	Asn	Thr 785	Leu	Thr	Gly	Met	Gln 790	Pro	Leu	His	Thr	Phe 795
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<213> Homo sapiens

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Gln Thr Phe Glu Tyr Leu Lys Arg Glu His Ser Leu Ser Lys Pro
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Tyr Gln Gly Val Gly Thr Gly Ser Ser Ser Leu Trp Asn Leu Met 65 70 75

Gly Asn Ala Met Val Met Thr Gln Tyr Ile Arg Leu Thr Pro Asp 80 85 90

Met Gln Ser Lys Gln Gly Ala Leu Trp Asn Arg Val Pro Cys Phe 95 100 105

Leu Arg Asp Trp Glu Leu Gln Val His Phe Lys Ile His Gly Gln
110 115 120

Gly Lys Lys Asn Leu His Gly Asp Gly Leu Ala Ile Trp Tyr Thr 125 130 135

Lys Asp Arg Met Gln Pro Gly Pro Val Phe Gly Asn Met Asp Lys 140 145 150

Phe Val Gly Leu Gly Val Phe Val Asp Thr Tyr Pro Asn Glu Glu
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Lys Gln Gln Glu Arg Val Phe Pro Tyr Ile Ser Ala Met Val Asn 170 175 180

Asn Gly Ser Leu Ser Tyr Asp His Glu Arg Asp Gly Arg Pro Thr 185 190 195

Glu Leu Gly Gly Cys Thr Ala Ile Val Arg Asn Leu His Tyr Asp 200 205 210

Thr Phe Leu Val Ile Arg Tyr Val Lys Arg His Leu Thr Ile Met 215 220 225

Met Asp Ile Asp Gly Lys His Glu Trp Arg Asp Cys Ile Glu Val 230 235 240

Pro Gly Val Arg Leu Pro Arg Gly Tyr Tyr Phe Gly Thr Ser Ser 245 250 255

<213> Homo sapiens

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His Arg Asp Val Phe Leu Pro Ser Val Asp Asn Met Lys Leu Pro
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                 290
Glu Met Thr Ala Pro Leu Pro Pro Leu Ser Gly Leu Ala Leu Phe
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                 305
Leu Ile Val Phe Phe Ser Leu Val Phe Ser Val Phe Ala Ile Val
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<212> PRT

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<400> 385

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Arg Ser Met Glu Gly His Ala Pro His His Phe Lys Leu Val Ser 80 85 90

Val His Val Phe Ile Arg His Gly Asp Arg Tyr Pro Leu Tyr Val 95 100 105

Ile Pro Lys Thr Lys Arg Pro Glu Ile Asp Cys Thr Leu Val Ala 110 115 120

Asn Arg Lys Pro Tyr His Pro Lys Leu Glu Ala Phe Ile Ser His 125 130 135

Met Ser Lys Gly Ser Gly Ala Ser Phe Glu Ser Pro Leu Asn Ser 140 145 150

Leu Pro Leu Tyr Pro Asn His Pro Leu Cys Glu Met Gly Glu Leu 155 160 165

Thr Gln Thr Gly Val Val Gln His Leu Gln Asn Gly Gln Leu Leu 170 175 180

Arg Asp Ile Tyr Leu Lys Lys His Lys Leu Leu Pro Asn Asp Trp
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Ser Ala Asp Gln Leu Tyr Leu Glu Thr Thr Gly Lys Ser Arg Thr 200 205 210

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His	Phe	Суѕ	His	Asn 305	Val	Ser	Phe	Pro	Cys 310	Thr	Arg	Asn	Gly	Cys 315
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Gln	Arg	Ala	Thr	Glu 365	Gly	Arg	Lys	Glu	Glu 370	Leu	Phe	Ala	Leu	Tyr 375
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Leu	Ser	Glu	Ala	Arg 395	Phe	Pro	Arg	Phe	Ala 400	Ala	Arg	Leu	Ile	Phe 405
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Ile	Leu	Tyr	Asn	Gly 425		Asp	Val	Thr	Phe 430	His	Thr	Ser	Phe	Cys 435
Gln	Asp	His	His	Lys 440		Ser	Pro	Lys	Pro 445	Met	Cys	Pro	Leu	Glu 450
Asn	Leu	Val	Arg	Phe 455		Lys	Arg	Asp	Met 460	Phe	Val	Ala	Leu	Gly 465
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<sup>&</sup>lt;210> 390

<sup>&</sup>lt;211> 916

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 390

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<211> 260

<212> PRT

<213> Homo sapiens

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Trp Gln Ala Ala Leu Phe Gln Gly Gln Gln Leu Leu Cys Gly Gly
50 55 60

Val Leu Val Gly Gly Asn Trp Val Leu Thr Ala Ala His Cys Lys
65 70 75

Lys Pro Lys Tyr Thr Val Arg Leu Gly Asp His Ser Leu Gln Asn 80 85 90

Lys Asp Gly Pro Glu Gln Glu Ile Pro Val Val Gln Ser Ile Pro 95 100 105

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Leu Met Leu Leu Gln Leu Arg Asp Gln Ala Ser Leu Gly Ser Lys
                 125
                                     130
Val Lys Pro Ile Ser Leu Ala Asp His Cys Thr Gln Pro Gly Gln
                 140
                                     145
Lys Cys Thr Val Ser Gly Trp Gly Thr Val Thr Ser Pro Arg Glu
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Asn Phe Pro Asp Thr Leu Asn Cys Ala Glu Val Lys Ile Phe Pro
                                     175
Gln Lys Lys Cys Glu Asp Ala Tyr Pro Gly Gln Ile Thr Asp Gly
                                                          195
                 185
Met Val Cys Ala Gly Ser Ser Lys Gly Ala Asp Thr Cys Gln Gly
Asp Ser Gly Gly Pro Leu Val Cys Asp Gly Ala Leu Gln Gly Ile
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Cys	Val	Cys	Tyr	Asn 35	Glu	Pro	Lys	Val	Thr 40	Thr	Ser	Cys	Pro	G1n 45
Gln	Gly	Leu	Gln	Ala 50	Val	Pro	Val	Gly	Ile 55	Pro	Ala	Ala	Ser	Gln 60
Arg	Ile	Phe	Leu	His 65	Gly	Asn	Arg	Ile	Ser 70	His	Val	Pro	Ala	Ala 75
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Val	Asp	Pro	Ala	Thr 125	Phe	His	Gly	Leu	Gly 130	Arg	Leu	His	Thr	Leu 135
His	Leu	Asp	Arg	Cys 140	Gly	Leu	Gln	Glu	Leu 145	Gly	Pro	Gly	Leu	Phe 150
Arg	Gly	Leu	Ala	Ala 155	Leu	Gln	Tyr	Leu	Tyr 160	Leu	Gln	Asp	Asn	Ala 165
Leu	Gln	Ala	Leu	Pro 170	Asp	Asp	Thr	Phe	Arg 175	Asp	Leu	Gly	Asn	Leu 180
Thr	His	Leu	Phe	Leu 185	His	Gly	Asn	Arg	Ile 190	Ser	Ser	Val	Pro	Glu 195
Arg	Ala	Phe	Arg	Gly 200	Leu	His	Ser	Leu	Asp 205	Arg	Leu	Leu	Leu	His 210
Gln	Asn	Arg	Val	Ala 215	His	Val	His	Pro	His 220	Ala	Phe	Arg	Asp	Let 225
Gly	Arg	Leu	Met	Thr 230	Leu	Tyr	Leu	Phe	Ala 235	Asn	Asn	Leu	Ser	Ala 240
Leu	Pro	Thr	Glu	Ala 245	Leu	Ala	Pro	Leu	Arg 250	Ala	Leu	Gln	Tyr	Let 255
Arg	Leu	Asn	Asp	Asn 260	Pro	Trp	Val	Cys	Asp 265	Cys	Arg	Ala	Arg	Pro 270
Leu	Trp	Ala	Trp	Leu 275		Lys	Phe	Arg	Gly 280	Ser	Ser	Ser	Glu	Va. 285
Pro	Cys	Ser	Leu	Pro 290		Arg	Leu	Ala	Gly 295		Asp	Leu	Lys	Arg 300
Leu	Ala	Ala	Asn	Asp 305		Gln	Gly	Cys	Ala 310		Ala	Thr	Gly	31:
Tyr	His	Pro	Ile	Trp	Thr	Gly	Arg	Ala	Thr	Asp	Glu	Glu	Pro	Lei

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Val Thr Asn Leu Ala Lys Asp Leu Gly Leu Glu Gln Arg Glu Phe 50 55 60

Ser Arg Arg Gly Val Arg Val Val Ser Arg Gly Asn Lys Leu His
65 70 75

Leu Gln Leu Asn Gln Glu Thr Ala Asp Leu Leu Leu Asn Glu Lys 80 85 90

Leu Asp Arg Glu Asp Leu Cys Gly His Thr Glu Pro Cys Val Leu 95 100 105

Arg Phe Gln Val Leu Leu Glu Ser Pro Phe Glu Phe Phe Gln Ala 110 115 120

Glu Leu Gln Val Ile Asp Ile Asn Asp His Ser Pro Val Phe Leu 125 130 135

Asp Lys Gln Met Leu Val Lys Val Ser Glu Ser Ser Pro Pro Gly 140 145

Thr Thr Phe Pro Leu Lys Asn Ala Glu Asp Leu Asp Val Gly Gln
155 160 165

Asn Asn Ile Glu Asn Tyr Ile Ile Ser Pro Asn Ser Tyr Phe Arg 170 175 180

Val Leu Thr Arg Lys Arg Ser Asp Gly Arg Lys Tyr Pro Glu Leu 185 190 195

Val Leu Asp Lys Ala Leu Asp Arg Glu Glu Glu Ala Glu Leu Arg 200 205 210

Leu Thr Leu Thr Ala Leu Asp Gly Gly Ser Pro Pro Arg Ser Gly 215 220 225

Thr Ala Gln Val Tyr Ile Glu Val Leu Asp Val Asn Asp Asn Ala

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Asp	Thr	Gly	Val	Asn 275	Gly	Glu	Ile	Ser	Tyr 280	Ser	Leu	Phe	Gln	Ala 285
Ser	Glu	Glu	Ile	Gly 290	Lys	Thr	Phe	Lys	Ile 295	Asn	Pro	Leu	Thr	Gly 300
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Pro	Ala	Leu	His	Ile 470	Arg	Ser	Val	Ser	Ala 475	Thr	Asp	Arg	Asp	Ser 480
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Pro	His	Leu	Pro	Leu 500	Thr	Ser	Leu	Val	Ser 505	Ile	Asn	Ala	Asp	Asn 510
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Asn Ile Gln

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Glu Glu Ala Asn Ala Val Leu Gly Leu Asp Thr Gln Gly Asp His

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Met Val Met Leu Ser Val Ile Pro Gly Glu Ala Glu Asp Lys Val

Ser Ser Glu Pro Ser Gly Val Thr Cys Gly Ala Gly Gly Ala Glu 110 115 120

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Ala Gly Ala His Phe Pro Asp Arg Glu Glu Glu Tyr Tyr Thr Glu 140 145 150

Pro Glu Val Ala Glu Ser Asp Ala Ala Pro Thr Glu Asp Ser Asn 155 160 165

Asn Thr Glu Ser Leu Lys Ser Pro Lys Val Asn Cys Glu Glu Arg 170 175 180

Asn Ile Thr Gly Leu Glu Asn Phe Thr Leu Lys Ile Leu Asn Met 185 190 195

Ser Gln Asp Leu Met Asp Phe Leu Asn Pro Asn Gly Ser Asp Cys 200 205

Thr Leu Val Leu Phe Tyr Thr Pro Trp Cys Arg Phe Ser Ala Ser 215 220 225

Leu Ala Pro His Phe Asn Ser Leu Pro Arg Ala Phe Pro Ala Leu 230 235 240

His Phe Leu Ala Leu Asp Ala Ser Gln His Ser Ser Leu Ser Thr 245 250 255

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 tececetege tageagegae caecteetge cagecacega ggaageteea 550
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<212> PRT

<213> Homo sapiens

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His Cys Cys Leu Gly Ser Ala Arg Gly Leu Phe Leu Phe Gly Gln 20 25 30

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Asn Leu Gln Leu Cys His Gly Ile Glu Tyr Gln Asn Met Arg Leu
50 55 60

Pro Asn Leu Gly His Glu Thr Met Lys Glu Val Leu Glu Gln 65 70 75

Ala Gly Ala Trp Ile Pro Leu Val Met Lys Gln Cys His Pro Asp 80 85 90

Thr Lys Lys Phe Leu Cys Ser Leu Phe Ala Pro Val Cys Leu Asp 95 100 105

Asp Leu Asp Glu Thr Ile Gln Pro Cys His Ser Leu Cys Val Gln 110 115 120

Val Lys Asp Arg Cys Ala Pro Val Met Ser Ala Phe Gly Phe Pro 125 130 135

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Leu Cys Ile Pro Leu Ala Ser Ser Asp His Leu Leu Pro Ala Thr
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Glu Glu Ala Pro Lys Val Cys Glu Ala Cys Lys Asn Lys Asn Asp
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Asp Asp Asn Asp Ile Met Glu Thr Leu Cys Lys Asn Asp Phe Ala
Leu Lys Ile Lys Val Lys Glu Ile Thr Tyr Ile Asn Arg Asp Thr
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Lys Ile Ile Leu Glu Thr Lys Ser Lys Thr Ile Tyr Lys Leu Asn
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Gly Val Ser Glu Arg Asp Leu Lys Lys Ser Val Leu Trp Leu Lys
                                     235
Asp Ser Leu Gln Cys Thr Cys Glu Glu Met Asn Asp Ile Asn Ala
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Pro Tyr Leu Val Met Gly Gln Lys Gln Gly Glu Leu Val Ile
Thr Ser Val Lys Arg Trp Gln Lys Gly Gln Arg Glu Phe Lys Arg
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<213> Homo sapiens

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Leu Trp Leu Ser Phe Ala Pro Val Ala Asp Val Ile Ala Glu Asp 50 55 60

Leu Val Leu Ser Met Glu Gln Ile Asn Trp Leu Ser Leu Val Tyr 65 70 75

Leu Val Val Ser Thr Pro Phe Gly Val Ala Ala Ile Trp Ile Leu 80 85 90

Asp Ser Val Gly Leu Arg Ala Ala Thr Ile Leu Gly Ala Trp Leu 95 100 105

Asn Phe Ala Gly Ser Val Leu Arg Met Val Pro Cys Met Val Val

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Cys .	Ala	Leu	Ala	Gln 140	Ser	Leu	Val	Ile	Phe 145	Ser	Pro	Ala	Lys	Leu 150
Ala	Ala	Leu	Trp	Phe 155	Pro	Glu	His	Gln	Arg 160	Ala	Thr	Ala	Asn	Met 165
Leu	Ala	Thr	Met	Ser 170	Asn	Pro	Leu	Gly	Val 175	Leu	Val	Ala	Asn	Val 180
Leu	Ser	Pro	Val	Leu 185	Val	Lys	Lys	Gly	Glu 190	Asp	Ile	Pro	Leu	Met 195
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Thr	Ile	Cys	Leu	Trp 215	Glu	Ser	Val	Pro	Pro 220	Thr	Pro	Pro	Ser	Ala 225
Gly	Ala	Ala	Ser	Ser 230	Thr	Ser	Glu	Lys	Phe 235	Leu	Asp	Gly	Leu	Lys 240
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Leu	Суз	Gly	Ala	Leu 290	Phe	Ile	Thr	Phe	Gly 295	Ile	Leu	Gly	Ala	Leu 300
Ala	Leu	Gly	Pro	Tyr 305	Val	Asp	Arg	Thr	Lys 310	His	Phe	Thr	Glu	Ala 315
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Thr	Cys	Ser	Leu	Leu 350	Gly	Leu	Phe	Gly	Phe 355	Ser	Val	Gly	Pro	Val 360
Ala	Met	Glu	Leu	Ala 365	Val	Glu	Cys	Ser	Phe 370		Val	Gly	Glu	Gly 375
Ala	Ala	Thr	Gly	Met 380	Ile	Phe	Val	Leu	Gly 385		Ala	Glu	Gly	Ile 390
Leu	Ile	Met	Leu	Ala 395		Thr	Ala	Leu	Thr 400		Arg	Arg	Ser	Glu 405

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Cys Ile Leu Ala Val Phe Phe His Thr Pro Tyr Arg Arg Leu Gln
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Ala Asp Ser Gly Pro Gly Val Asp Arg Gly Gly Ala Gly Arg Ala
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Gly Val Leu Gly Pro Ser Thr Ala Thr Pro Glu Cys Thr Ala Arg
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Gly Ala Ser Leu Glu Asp Pro Arg Gly Pro Gly Ser Pro His Pro
Ala Cys His Arg Ala Thr Pro Arg Ala Gln Gly Pro Ala Ala Thr
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Arg Thr Arg Ile Pro Leu Asp Arg Ala Leu Asp Pro Asp Thr Gly

Pro Asn Thr Leu His Thr Tyr Thr Leu Ser Pro Ser Glu His Phe

170

185

175

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Asp	Leu	Val	Leu	Thr 215	Ala	Tyr	Asp	Asn	Gly 220	Asn	Pro	Pro	Lys	Ser 225
Gly	Thr	Ser	Leu	Val 230	Lys	Val	Asn	Val	Leu 235	Asp	Ser	Asn	Asp	Asn 240
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Asp	Ala	Ala	Pro	Gly 260	Thr	Leu	Leu	Ile	Lys 265	Leu	Thr	Ala	Thr	Asp 270
Pro	Asp	Gln	Gly	Pro 275	Asn	Gly	Glu	Val	Glu 280	Phe	Phe	Leu	Ser	Lys 285
His	Met	Pro	Pro	Glu 290	Val	Leu	Asp	Thr	Phe 295	Ser	Ile	Asp	Ala	Lys 300
Thr	Gly	Gln	Val	Ile 305	Leu	Arg	Arg	Pro	Leu 310	Asp	Tyr	Glu	Lys	Asn 315
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Pro	Ile	Pro	Ala	His 335	Cys	Lys	Val	Leu	Ile 340	Lys	Val	Leu	Asp	Val 345
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Val	Met	Ala	Asp	Asp 380	Leu	Asp	Ser	Gly	His 385	Asn	Gly	Leu	Val	His 390
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Asn	Gly	Asn	Thr	Tyr 410		Leu	Leu	Thr	Asn 415	Ala	Thr	Leu	Asp	Arg 420
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Glu	Val	Ser	Thr	Arg 470		Asn	Asn	Leu	Pro 475	Ser	Leu	His	Leu	Ile 480
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Leu	Asp	Ala	Asn	Asp 560	Asn	Ala	Pro	Glu	Val 565	Val	Gln	Pro	Val	Leu 570
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Phe	Leu	Leu	Thr	Thr 620	Ile	Val	Ala	Arg	Asp 625	Ala	Asp	Ser	Gly	Ala 630
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Thr	Asn	Ala	Ser	Ser 665		Ile	Gly	Ser	Glu 670	Trp	Glu	Leu	Glu	Ile 675
Val	Val	Glu	Asp	Gln 680		Ser	Pro	Pro	Leu 685	Gln	Thr	Arg	Ala	Leu 690
Leu	Arg	Val	Met	Phe 695	Val	Thr	Ser	Val	Asp 700	His	Leu	Arg	Asp	Ser 705
Ala	Arg	Lys	Pro	Gly 710		Leu	Ser	Met	Ser 715	Met	Leu	Thr	Val	Ile 720
Cys	Leu	Ala	. Val	Leu 725		Gly	' Ile	Phe	Gly 730		Ile	. Leu	Ala	Leu 735
Phe	Met	. Ser	: Ile	Cys 740		Thr	Glu	Lys	Lys 745	Asp	Asn	Arç	Ala	Tyr 750
Asn	Cys	Arç	g Glu	Ala 755		ser	Thr	Tyr	760		Glr	Pro	Lys	765
Pro	Gln	Lys	His	77(		Lys	s Ala	Asp	775	His	Leu	ı Val	Pro	780

Leu	Arg	Gly	Gln	Ala 785	Gly	Glu	Pro	Суз	Glu 790	Val	Gly	Gln	Ser	His 795
Lys	Asp	Val	Asp	198 800	Glu	Ala	Met	Met	Glu 805	Ala	Gly	Trp	Asp	Pro 810
Cys	Leu	Gln	Ala	Pro 815	Phe	His	Leu	Thr	Pro 820	Thr	Leu	Tyr	Arg	Thr 825
Leu	Arg	Asn	Gln	Gly 830	Asn	Gln	Gly	Ala	Pro 835	Ala	Glu	Ser	Arg	Glu 840
Val	Leu	Gln	Asp	Thr 845	Val	Asn	Leu	Leu	Phe 850	Asn	His	Pro	Arg	Gln 855
Arg	Asn	Ala	Ser	Arg 860	Glu	Asn	Leu	Asn	Leu 865	Pro	Glu	Pro	Gln	Pro 870
Ala	Thr	Gly	Gln	Pro 875	Arg	Ser	Arg	Pro	Leu 880	Lys	Val	Ala	Gly	Ser 885
Pro	Thr	Gly	Arg	Leu 890	Ala	Gly	Asp	Gln	Gly 895	Ser	Glu	Glu	Ala	Pro 900
Gln	Arg	Pro	Pro	Ala 905	Ser	Ser	Ala	Thr	Leu 910	Arg	Arg	Gln	Arg	His 915
Leu	Asn	Gly	Lys	Val 920	Ser	Pro	Glu	Lys	Glu 925	Ser	Gly	Pro	Arg	Gln 930
Ile	Leu	Arg	Ser	Leu 935	Val	Arg	Leu	Ser	Val 940	Ala	Ala	Phe	Ala	Glu 945
Arg	Asn	Pro	Val	Glu 950	Glu	Leu	Thr	Val	Asp 955	Ser	Pro	Pro	Val	Gln 960
Gln	Ile	Ser	Gln	Leu 965	Leu	Ser	Leu	Leu	His 970	Gln	Gly	Gln	Phe	Gln 975
Pro	Lys	Pro	Asn	His 980		Gly	Asn	Lys	Tyr 985	Leu	Ala	Lys	Pro	Gly 990
Gly	ser Ser	· Arg	Ser	Ala 995		Pro	Asp	Thr	Asp 1000	Gly	Pro	Ser	Ala	Arg 1005
Ala	Gly	Gly	Gln	Thr 1010		) Pro	Glu	Gln	. Glu 1015	Glu	Gly	Pro	Leu	Asp 1020
Pro	Glu	Glu	Asp	Leu 1025		· Val	. Lys	Gln	Leu 1030	Leu )	Glu	ı Glü	ı Glu	Leu 1035
Ser	Ser	Leu	ı Leu	Asp 1040		Ser	Thr	: Gly	Leu 1045	a Ala	. Leu	ı Asp	Arg	Leu 1050
Ser	: Ala	a Pro	Asp	Pro 1055	Ala	Trp	Met	: Ala	1060	j Leu	ı Ser	: Lei	ı Pro	Leu 1065
Thi	Thr	: Asr	туг	: Arç	g Asp	) Asn	ı Val	Ile	e Ser	rPro	Asp	Ala	a Ala	a Ala

Thr Glu Glu Pro Arg Thr Phe Gln Thr Phe Gly Lys Ala Glu Ala 1085 1090 1095

Pro Glu Leu Ser Pro Thr Gly Thr Arg Leu Ala Ser Thr Phe Val 1100 1105 1110

Ser Glu Met Ser Ser Leu Leu Glu Met Leu Leu Glu Gln Arg Ser 1115 1120 1125

Ser Met Pro Val Glu Ala Ala Ser Glu Ala Leu Arg Arg Leu Ser 1130 1135 1140

Val Cys Gly Arg Thr Leu Ser Leu Asp Leu Ala Thr Ser Ala Ala 1145 1150 1155

Ser Gly Met Lys Val Gln Gly Asp Pro Gly Gly Lys Thr Gly Thr 1160 1165 1170

Glu Gly Lys Ser Arg Gly Ser Ser Ser Ser Ser Arg Cys Leu 1175 1180

<210> 426

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 426

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<210> 427

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 427

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<211> 50

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<400> 428

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<210> 429

<211> 2037

<212> DNA <213> Homo sapiens

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<210> 430

<211> 455

<212> PRT

<213> Homo sapiens

<400> 430

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20 25 30

Lys Asp Tyr Glu Ile Arg Gln Tyr Val Val Gln Val Ile Phe Ser 35 40 45

Val Thr Phe Ala Phe Ser Cys Thr Met Phe Glu Leu Ile Ile Phe
50 55 60

Glu Ile Leu Gly Val Leu Asn Ser Ser Ser Arg Tyr Phe His Trp
65 70 75

Lys Met Asn Leu Cys Val Ile Leu Leu Ile Leu Val Phe Met Val

Pro Phe Tyr Ile Gly Tyr Phe Ile Val Ser Asn Ile Arg Leu Leu 95 100 105

His Lys Gln Arg Leu Leu Phe Ser Cys Leu Leu Trp Leu Thr Phe 110 115

Met	Tyr	Phe	Phe	Trp 125	Lys	Leu	Gly	Asp	Pro 130	Phe	Pro	Ile	Leu	Ser 135
Pro	Lys	His	Gly	Ile 140	Leu	Ser	Ile	Glu	Gln 145	Leu	Ile	Ser	Arg	Val 150
Gly	Val	Ile	Gly	Val 155	Thr	Leu	Met	Ala	Leu 160	Leu	Ser	Gly	Phe	Gly 165
Ala	Val	Asn	Cys	Pro 170	Tyr	Thr	Tyr	Met	Ser 175	Tyr	Phe	Leu	Arg	Asn 180
Val	Thr	Asp	Thr	Asp 185	Ile	Leu	Ala	Leu	Glu 190	Arg	Arg	Leu	Leu	Gln 195
Thr	Met	Asp	Met	Ile 200	Ile	Ser	Lys	Lys	Lys 205	Arg	Met	Ala	Met	Ala 210
Arg	Arg	Thr	Met	Phe 215	Gln	Lys	Gly	Glu	Val 220	His	Asn	Lys	Pro	Ser 225
Gly	Phe	Trp	Gly	Met 230	Ile	Lys	Ser	Val	Thr 235	Thr	Ser	Ala	Ser	Gly 240
Ser	Glu	Asn	Leu	Thr 245	Leu	Ile	Gln	Gln	Glu 250	Val	Asp	Ala	Leu	Glu 255
Glu	Leu	Ser	Arg	Gln 260	Leu	Phe	Leu	Glu	Thr 265	Ala	Asp	Leu	Tyr	Ala 270
Thr	Lys	Glu	Arg	Ile 275	Glu	Tyr	Ser	Lys	Thr 280	Phe	Lys	Gly	Lys	Tyr 285
Phe	Asn	Phe	Leu	Gly 290		Phe	Phe	Ser	Ile 295	Tyr	Cys	Val	Trp	Lys 300
Ile	Phe	Met	Ala	Thr 305		Asn	Ile	Val	Phe 310	Asp	Arg	Val	Gly	Lys 315
Thr	Asp	Pro	Val	Thr 320		Gly	Ile	Glu	Ile 325	Thr	Val	Asn	Tyr	Leu 330
Gly	' Ile	Gln	. Phe	Asp 335		Lys	Phe	Trp	Ser 340	Gln	His	Ile	Ser	Phe 345
Ile	. Leu	Val	Gly	7 Ile 350		Ile	Val	. Thr	Ser 355	Ile	Arg	Gly	Leu	Leu 360
Ile	Thr	Leu	Thr	Lys 365		Phe	Tyr	: Ala	. Il∈ 370	e Ser	Ser	Ser	Lys	Ser 375
Ser	: Asn	Val	. Ile	9 Val		. Leu	Leu	ı Ala	Glr 385	ılle S	Met	Gly	Met	Tyr 390
Phe	e Val	. Ser	Ser	Val 395	Lev	ı Lev	ı Ile	e Arg	Met 400	Ser	Met	. Pro	Leu	Glu 405
Туз	. Arg	Thr	: Ile	: Ile	e Thr	Glu	ı Val	Leu	ı Gly	7 Glu	Let	ı Glr	. Phe	Asn

420 415 410

Phe Tyr His Arg Trp Phe Asp Val Ile Phe Leu Val Ser Ala Leu 425

Ser Ser Ile Leu Phe Leu Tyr Leu Ala His Lys Gln Ala Pro Glu 445

Lys Gln Met Ala Pro 455

<210> 431

<211> 407

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 78, 81, 113, 157, 224, 297

<223> unknown base

<400> 431

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ttgtacnggt gatcttctcc gtgacgtttg ccatttcttg caccatgttt 200

gagctcatca tctttgaaat cttnggagta ttgaatagca gctcccgtta 250

ttttcactgg aaaatgaacc tgtgtgtaat tctgctgatc ctggttntca 300

tggtgccttt ttacattggc tattttattg tgagcaatat ccgactactg 350

cataaacaac gactgctttt ttcctgtctc ttatggctga cctttatgta 400

tttccag 407

<210> 432

<211> 457 <212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 31, 66, 81-82, 84, 122, 184, 187, 232, 241, 400, 424, 427, 434

<223> unknown base

<400> 432

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tattttttgg atttggggta gnttttttc atgcgccaat tgtttaaaga 150

ctatgagata cgtcagtatg ttgtacaggt gatnttntcc gtgacgtttg 200

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cattttcttg caccatgttt gagctcatca tntttgaaat nttaggagta 250
ttgaatagca gctcccgtta ttttcactgg aaaatgaacc tgtgtgtaat 300
tctgctgatc ctggttttca tggtgccttt ttacattggc tattttattg 350
tgagcaatat ccgactactg cataaacaac gactgctttt ttcctgtctn 400
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cattctc 457
<210> 433
<211> 20
<212> DNA
<213> Artificial Sequence
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<223> Synthetic oligonucleotide probe
<400> 433
aagtggagcc ggagccttcc 20
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<210> 436
<211> 3951
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 gggcctccgg gatttgctac ctttttggct ccctgctcgt cgaactgctc 100
 ttctcacggg ctgtcgcctt caatctggac gtgatgggtg ccttgcgcaa 150
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ggaggggag ccaggcagcc tcttcggctt ctctgtggcc ctgcaccggc 200

agttgcagcc ccgaccccag agctggctgc tggtgggtgc tccccaggcc 250 ctggctcttc ctgggcagca ggcgaatcgc actggaggcc tcttcgcttg 300 cccgttgagc ctggaggaga ctgactgcta cagagtggac atcgaccagg 350 gagctgatat gcaaaaggaa agcaaggaga accagtggtt gggagtcagt 400 gttcggagcc aggggcctgg gggcaagatt gttacctgtg cacaccgata 450 tgaggcaagg cagcgagtgg accagatcct ggagacgcgg gatatgattg 500 gtcgctgctt tgtgctcagc caggacctgg ccatccggga tgagttggat 550 ggtggggaat ggaagttctg tgagggacgc ccccaaggcc atgaacaatt 600 tgggttctgc cagcagggca cagctgccgc cttctcccct gatagccact 650 acctcctctt tggggcccca ggaacctata attggaaggg cacggccagg 700 gtggagetet gtgcacaggg etcageggae etggcacace tggaegaegg 750 tecetacgag gegggggag agaaggagea ggaeeeeege eteateeegg 800 tccctgccaa cagctacttt ggcttctcta ttgactcggg gaaaggtctg 850 gtgcgtgcag aagagctgag ctttgtggct ggagcccccc gcgccaacca 900 caagggtgct gtggtcatcc tgcgcaagga cagcgccagt cgcctggtgc 950 ccgaggttat gctgtctggg gagcgcctga cctccggctt tggctactca 1000 ctggctgtgg ctgacctcaa cagtgatggc tggccagacc tgatagtggg 1050 tgcccctac ttctttgagc gccaagaaga gctggggggt gctgtgtatg 1100 tgtacttgaa ccagggggt cactgggctg ggateteece teteeggete 1150 tgcggctccc ctgactccat gttcgggatc agcctggctg tcctggggga 1200 cctcaaccaa gatggctttc cagatattgc agtgggtgcc ccctttgatg 1250 gtgatgggaa agtcttcatc taccatggga gcagcctggg ggttgtcgcc 1300 aaaccttcac aggtgctgga gggcgaggct gtgggcatca agagcttcgg 1350 ctactccctg tcaggcagct tggatatgga tgggaaccaa taccctgacc 1400 tgctggtggg ctccctggct gacaccgcag tgctcttcag ggccagaccc 1450 atcctccatg tctcccatga ggtctctatt gctccacgaa gcatcgacct 1500 ggagcagccc aactgtgctg gcggccactc ggtctgtgtg gacctaaggg 1550 tctgtttcag ctacattgca gtccccagca gctatagccc tactgtggcc 1600 ctggactatg tgttagatgc ggacacagac cggaggctcc ggggccaggt 1650 teceegtgtg aegtteetga geegtaacet ggaagaacee aageaceagg 1700 cctcgggcac cgtgtggctg aagcaccagc atgaccgagt ctgtggagac 1750 gccatgttcc agctccagga aaatgtcaaa gacaagcttc gggccattgt 1800 agtgaccttg tectacagte tecagaceee teggeteegg egacaggete 1850 ctggccaggg gctgcctcca gtggccccca tcctcaatgc ccaccagccc 1900 agcacccagc gggcagagat ccacttcctg aagcaaggct gtggtgaaga 1950 caagatetge cagageaate tgeagetggt ceaegeeege ttetgtacee 2000 gggtcagcga cacggaattc caacctctgc ccatggatgt ggatggaaca 2050 acagecetgt ttgcactgag tgggcageca gtcattggee tggagetgat 2100 ggtcaccaac ctgccatcgg acccagccca gccccaggct gatggggatg 2150 atgcccatga agcccagctc ctggtcatgc ttcctgactc actgcactac 2200 tcaggggtcc gggccctgga ccctgcggag aagccactct gcctgtccaa 2250 tgagaatgcc tcccatgttg agtgtgagct ggggaacccc atgaagagag 2300 gtgcccaggt caccttctac ctcatcctta gcacctccgg gatcagcatt 2350 gagaccacgg aactggaggt agagctgctg ttggccacga tcagtgagca 2400 ggagctgcat ccagtctctg cacgagcccg tgtcttcatt gagctgccac 2450 tgtccattgc aggaatggcc attccccagc aactcttctt ctctggtgtg 2500 gtgagggggg agagagccat gcagtctgag cgggatgtgg gcagcaaggt 2550 caagtatgag gtcacggttt ccaaccaagg ccagtcgctc agaaccctgg 2600 gctctgcctt cctcaacatc atgtggcctc atgagattgc caatgggaag 2650 tggttgctgt acccaatgca ggttgagctg gagggcgggc aggggcctgg 2700 gcagaaaggg ctttgctctc ccaggcccaa catcctccac ctggatgtgg 2750 acagtaggga taggaggcgg cgggagctgg agccacctga gcagcaggag 2800 cctggtgagc ggcaggagcc cagcatgtcc tggtggccag tgtcctctgc 2850 tgagaagaag aaaaacatca ccctggactg cgcccggggc acggccaact 2900 gtgtggtgtt cagctgccca ctctacagct ttgaccgcgc ggctgtgctg 2950 catgtctggg gccgtctctg gaacagcacc tttctggagg agtactcagc 3000 tgtgaagtcc ctggaagtga ttgtccgggc caacatcaca gtgaagtcct 3050 ccataaagaa cttgatgctc cgagatgcct ccacagtgat cccagtgatg 3100 gtatacttgg accccatggc tgtggtggca gaaggagtgc cctggtgggt 3150 catcetectg getgtactgg etgggetget ggtgetagea etgetggtge 3200 tgctcctgtg gaagatggga ttcttcaaac gggcgaagca ccccgaggcc 3250 acceptgcccc agtaccatgc ggtgaagatt cctcgggaag accgacagca 3300 gttcaaggag gagaagacgg gcaccatcct gaggaacaac tggggcagcc 3350 cccggcggga gggcccggat gcacacccca tcctggctgc tgacgggcat 3400 cccgagctgg gccccgatgg gcatccaggg ccaggcaccg cctaggttcc 3450 catgtcccag cctggcctgt ggctgccctc catcccttcc ccagagatgg 3500 ctccttggga tgaagagggt agagtgggct gctggtgtcg catcaagatt 3550 tggcaggatc ggcttcctca ggggcacaga cctctcccac ccacaagaac 3600 tcctcccacc caacttcccc ttagagtgct gtgagatgag agtgggtaaa 3650 tcagggacag ggccatgggg tagggtgaga agggcagggg tgtcctgatg 3700 caaaggtggg gagaagggat cctaatccct tcctctccca ttcaccctgt 3750 gtaacaggac cccaaggacc tgcctccccg gaagtgcctt aacctagagg 3800 gtcggggagg aggttgtqtc actgactcag gctgctcctt ctctagtttc 3850 ccctctcatc tgaccttagt ttgctgccat cagtctagtg gtttcgtggt 3900 ttcgtctatt tattaaaaaa tatttgagaa caaaaaaaaa aaaaaaaaa 3950 a 3951

<210> 437

<211> 1141

<212> PRT

<213> Homo sapiens

<400> 437

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Ala Val Ala Phe Asn Leu Asp Val Met Gly Ala Leu Arg Lys Glu 35 40 45

Gly Glu Pro Gly Ser Leu Phe Gly Phe Ser Val Ala Leu His Arg
50 55 60

Gln Leu Gln Pro Arg Pro Gln Ser Trp Leu Leu Val Gly Ala Pro
65 70 75

Gln Ala Leu Ala Leu Pro Gly Gln Gln Ala Asn Arg Thr Gly Gly

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Asn	Gln	Trp	Leu	Gly 125	Val	Ser	Val	Arg	Ser 130	Gln	Gly	Pro	Gly	Gly 135
Lys	Ile	Val	Thr	Cys 140	Ala	His	Arg	Tyr	Glu 145	Ala	Arg	Gln	Arg	Val 150
Asp	Gln	Ile	Leu	Glu 155	Thr	Arg	Asp	Met	Ile 160	Gly	Arg	Cys	Phe	Val 165
Leu	Ser	Gln	Asp	Leu 170	Ala	Ile	Arg	Asp	Glu 175	Leu	Asp	Gly	Gly	Glu 180
Trp	Lys	Phe	Cys	Glu 185	Gly	Arg	Pro	Gln	Gly 190	His	Glu	Gln	Phe	Gly 195
Phe	Cys	Gln	Gln	Gly 200	Thr	Ala	Ala	Ala	Phe 205	Ser	Pro	Asp	Ser	His 210
Tyr	Leu	Leu	Phe	Gly 215	Ala	Pro	Gly	Thr	Tyr 220	Asn	Trp	Lys	Gly	Thr 225
Ala	Arg	Val	Glu	Leu 230	Суз	Ala	Gln	Gly	Ser 235	Ala	Asp	Leu	Ala	His 240
Leu	Asp	Asp	Gly	Pro 245	Tyr	Glu	Ala	Gly	Gly 250	Glu	Lys	Glu	Gln	Asp 255
Pro	Arg	Leu	Ile	Pro 260	Val	Pro	Ala	Asn	Ser 265	Tyr	Phe	Gly	Phe	Ser 270
Ile	Asp	Ser	Gly	Lys 275	Gly	Leu	Val	Arg	Ala 280	Glu	Glu	Leu	Ser	Phe 285
Val	Ala	Gly	Ala	Pro 290		Ala	Asn	His	Lys 295		Ala	Val	Val	Ile 300
Leu	Arg	Lys	Asp	Ser 305	Ala	Ser	Arg	Leu	Val 310	Pro	Glu	Val	Met	Leu 315
Ser	Gly	Glu	Arg	Leu 320	Thr	Ser	Gly	Phe	Gly 325	Tyr	Ser	Leu	Ala	Val 330
Ala	Asp	Leu	Asn	Ser 335	Asp	Gly	Trp	Pro	Asp 340	Leu	Ile	Val	Gly	Ala 345
Pro	Tyr	Phe	Phe	Glu 350	Arg	Gln	Glu	Glu	Leu 355	Gly	Gly	Ala	Val	Туг 360
Val	Tyr	Leu	Asn	Gln 365	Gly	Gly	His	Trp	Ala 370	Gly	Ile	Ser	Pro	Leu 375

Arg Leu Cys Gly Ser Pro Asp Ser Met Phe Gly Ile Ser Leu Ala Val Leu Gly Asp Leu Asn Gln Asp Gly Phe Pro Asp Ile Ala Val Gly Ala Pro Phe Asp Gly Asp Gly Lys Val Phe Ile Tyr His Gly 410 415 Ser Ser Leu Gly Val Val Ala Lys Pro Ser Gln Val Leu Glu Gly 425 430 435 Glu Ala Val Gly Ile Lys Ser Phe Gly Tyr Ser Leu Ser Gly Ser 440 Leu Asp Met Asp Gly Asn Gln Tyr Pro Asp Leu Leu Val Gly Ser 455 Leu Ala Asp Thr Ala Val Leu Phe Arg Ala Arg Pro Ile Leu His Val Ser His Glu Val Ser Ile Ala Pro Arg Ser Ile Asp Leu Glu Gln Pro Asn Cys Ala Gly Gly His Ser Val Cys Val Asp Leu Arg Val Cys Phe Ser Tyr Ile Ala Val Pro Ser Ser Tyr Ser Pro Thr 515 Val Ala Leu Asp Tyr Val Leu Asp Ala Asp Thr Asp Arg Arg Leu 535 Arg Gly Gln Val Pro Arg Val Thr Phe Leu Ser Arg Asn Leu Glu 545 550 Glu Pro Lys His Gln Ala Ser Gly Thr Val Trp Leu Lys His Gln His Asp Arg Val Cys Gly Asp Ala Met Phe Gln Leu Gln Glu Asn 580 Val Lys Asp Lys Leu Arg Ala Ile Val Val Thr Leu Ser Tyr Ser 595 Leu Gln Thr Pro Arg Leu Arg Arg Gln Ala Pro Gly Gln Gly Leu 605 Pro Pro Val Ala Pro Ile Leu Asn Ala His Gln Pro Ser Thr Gln 625 Arg Ala Glu Ile His Phe Leu Lys Gln Gly Cys Gly Glu Asp Lys 635 Ile Cys Gln Ser Asn Leu Gln Leu Val His Ala Arg Phe Cys Thr 655 Arg Val Ser Asp Thr Glu Phe Gln Pro Leu Pro Met Asp Val Asp

				665					670	1				675
Gly	Thr	Thr	Ala	Leu 680	Phe	Ala	Leu	Ser	Gly 685		Pro	Val	Ile	Gl <sub>3</sub> 690
Leu	Glu	Leu	Met	Val 695		Asn	Leu	Pro	Ser 700		Pro	Ala	Gln	Pro 705
Gln	Ala	Asp	Gly	Asp 710	Asp	Ala	His	Glu	Ala 715		Leu	Leu	Val	Met 720
Leu	Pro	Asp	Ser	Leu 725	His	Tyr	Ser	Gly	Val 730		Ala	Leu	Asp	Pro 735
Ala	Glu	Lys	Pro	Leu 740	Суз	Leu	Ser	Asn	Glu 745		Ala	Ser	His	Val 750
Glu	Суз	Glu	Leu	Gly 755	Asn	Pro	Met	Lys	Arg 760	Gly	Ala	Gln	Val	Thr 765
Phe	Tyr	Leu	Ile	Leu 770	Ser	Thr	Ser	Gly	Ile 775	Ser	Ile	Glu	Thr	Thr 780
Glu	Leu	Glu	Val	Glu 785	Leu	Leu	Leu	Ala	Thr 790	Ile	Ser	Glu	Gln	Glu 795
Leu	His	Pro	Val	Ser 800	Ala	Arg	Ala	Arg	Val 805	Phe	Ile	Glu	Leu	Pro 810
Leu	Ser	Ile	Ala	Gly 815	Met	Ala	Ile	Pro	Gln 820	Gln	Leu	Phe	Phe	Ser 825
Gly	Val	Val	Arg	Gly 830	Glu	Arg	Ala	Met	Gln 835	Ser	Glu	Arg	Asp	Val 840
Gly	Ser	Lys	Val	Lys 845	Tyr	Glu	Val	Thr	Val 850	Ser	Asn	Gln	Gly	Gln 855
Ser	Leu	Arg	Thr	Leu 860	Gly	Ser	Ala	Phe	Leu 865	Asn	Ile	Met	Trp	Pro 870
His	Glu	Ile	Ala	Asn 875	Gly	Lys	Trp	Leu	Leu 880	Tyr	Pro	Met	Gln	Val 885
Glu	Leu	Glu	Gly	Gly 890	Gln	Gly	Pro	Gly	Gln 895	Lys	Gly	Leu	Cys	Ser 900
Pro	Arg	Pro	Asn	Ile 905	Leu	His	Leu	Asp	Val 910	Asp	Ser	Arg	Asp	Arg 915
Arg	Arg	Arg	Glu	Leu 920	Glu	Pro	Pro	Glu	Gln 925	Gln	Glu	Pro	Gly	Glu 930
			Pro	935					940					945
Lys	Lys	Lys	Asn	Ile 950	Thr	Leu	Asp	Cys	Ala 955	Arg	Gly	Thr	Ala	Asn 960

- Cys Val Val Phe Ser Cys Pro Leu Tyr Ser Phe Asp Arg Ala Ala 965 970 975
- Val Leu His Val Trp Gly Arg Leu Trp Asn Ser Thr Phe Leu Glu 980 985 990
- Glu Tyr Ser Ala Val Lys Ser Leu Glu Val Ile Val Arg Ala Asn 995 1000 1005
- Ile Thr Val Lys Ser Ser Ile Lys Asn Leu Met Leu Arg Asp Ala
  1010 1015 1020
- Ser Thr Val Ile Pro Val Met Val Tyr Leu Asp Pro Met Ala Val 1025 1030 1035
- Val Ala Glu Gly Val Pro Trp Trp Val Ile Leu Leu Ala Val Leu
  1040 1045 1050
- Ala Gly Leu Leu Val Leu Ala Leu Leu Val Leu Leu Trp Lys 1055 1060 1065
- Met Gly Phe Phe Lys Arg Ala Lys His Pro Glu Ala Thr Val Pro
  1070 1075 1080
- Gln Tyr His Ala Val Lys Ile Pro Arg Glu Asp Arg Gln Gln Phe 1085 1090 1095
- Lys Glu Glu Lys Thr Gly Thr Ile Leu Arg Asn Asn Trp Gly Ser 1100 1105 1110
- Pro Arg Arg Glu Gly Pro Asp Ala His Pro Ile Leu Ala Ala Asp 1115 1120 1125
- Gly His Pro Glu Leu Gly Pro Asp Gly His Pro Gly Pro Gly Thr 1130 1135 1140

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ggagctgcga gcacagtgct ggctcacaac aagatgctca aggtgtcagc 150
cgtactgtgt gtgtgtgcag ccgcttggtg cagtcagtct ctcgcagctg 200
ccgcggcggt ggctgcagcc ggggggcggt cggacggcqg taattttctq 250
gatgataaac aatggctcac cacaatctct cagtatgaca aggaagtcgg 300
acagtggaac aaattccgag acgaagtaga ggatgattat ttccgcactt 350
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aagcaggagt agaccatagg cagtggaggg gtcccatatt atccacctgc 550
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aacagatctc agtcaaatgt gaaggacatt gcccatgtcc ttcagataag 700
cccaccagta caagcagaaa tgttaagaga gcatgcagtg acctggagtt 750
cagggaagtg gcaaacagat tqcgqqactg qttcaagqcc cttcatqaaa 800
gtggaagtca aaacaagaag acaaaaacat tgctgaggcc tgagagaagc 850
agattcgata ccagcatctt gccaatttgc aaggactcac ttggctggat 900
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gtttaacaga cttgatacaa actatgacct gctattggac cagtcagagc 950

tcagaagcat ttaccttgat aagaatgaac agtgtaccaa ggcattcttc 1000 aattottgtg acacatacaa ggacagttta atatotaata atgagtggtg 1050 ctactgcttc cagagacagc aagacccacc ttgccagact gagctcagca 1100 atattcagaa gcggcaaggg gtaaagaagc tcctaggaca gtatatcccc 1150 ctgtgtgatg aagatggtta ctacaagcca acacaatgtc atggcagtgt 1200 tggacagtgc tggtgtttg acagatatgg aaatgaagtc atgggatcca 1250 gaataaatgg tgttgcagat tgtgctatag attttgagat ctccggagat 1300 tttgctagtg gcgattttca tgaatggact gatgatgagg atgatgaaga 1350 cgatattatg aatgatgaag atgaaattga agatgatgat gaagatgaag 1400 gggatgatga tgatggtggt gatgaccatg atgtatacat ttgattgatg 1450 acagttgaaa tcaataaatt ctacatttct aatatttaca aaaatgatag 1500 cctatttaaa attatcttct tccccaataa caaaatgatt ctaaacctca 1550 catatatttt gtataattat ttgaaaaatt gcagctaaag ttatagaact 1600 ttatgtttaa ataagaatca tttgctttga gtttttatat tccttacaca 1650 aaaagaaaat acatatgcag tctagtcaga caaaataaag ttttgaagtg 1700 ctactataat aaatttttca cgagaacaaa ctttgtaaat cttccataag 1750 caaaatgaca gctagtgctt gggatcgtac atgttaattt tttgaaagat 1800 aattctaagt gaaatttaaa ataaataaat ttttaatgac ctgggtctta 1850 aggatttagg aaaaatatgc atgctttaat tgcatttcca aagtagcatc 1900 ttgctagacc tagatgagtc aggataacag agagatacca catgactcca 1950 aaaaaaaaa aaaa 1964

<210> 442

<211> 436

<212> PRT

<213> Homo sapiens

<400> 442

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20 25 30

Gly Arg Ser Asp Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu 35 40 45

Thr Thr Ile Ser Gln Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys

				50					55					6(
Phe	Arg	Asp	Glu	Val 65	Glu	Asp	Asp	Tyr	Phe 70	Arg	Thr	Trp	Ser	Pro 75
Gly	Lys	Pro	Phe	Asp 80	Gln	Ala	Leu	Asp	Pro 85	Ala	Lys	Asp	Pro	Cys 90
Leu	Lys	Met	Lys	Cys 95	Ser	Arg	His	Lys	Val 100	Cys	Ile	Ala	Gln	Asp 105
Ser	Gln	Thr	Ala	Val 110	Cys	Ile	Ser	His	Arg 115	Arg	Leu	Thr	His	Arg 120
Met	Lys	Glu	Ala	Gly 125	Val	Asp	His	Arg	Gln 130	Trp	Arg	Gly	Pro	Ile 135
Leu	Ser	Thr	Cys	Lys 140	Gln	Cys	Pro	Val	Val 145	Tyr	Pro	Ser	Pro	Val 150
Cys	Gly	Ser	Asp	Gly 155	His	Thr	Tyr	Ser	Phe 160	Gln	Cys	Lys	Leu	Gl: 165
Tyr	Gln	Ala	Cys	Val 170	Leu	Gly	Lys	Gln	Ile 175	Ser	Val	Lys	Cys	Gl: 180
Gly	His	Cys	Pro	Cys 185	Pro	Ser	Asp	Lys	Pro 190	Thr	Ser	Thr	Ser	Arg 195
Asn	Val	Lys	Arg	Ala 200	Cys	Ser	Asp	Leu	Glu 205	Phe	Arg	Glu	Val	Ala 210
Asn	Arg	Leu	Arg	Asp 215	Trp	Phe	Lys	Ala	Leu 220	His	Glu	Ser	Gly	Se:
Gln	Asn	Lys	Lys	Thr 230	Lys	Thr	Leu	Leu	Arg 235	Pro	Glu	Arg	Ser	Arg 240
Phe	Asp	Thr	Ser	Ile 245	Leu	Pro	Ile	Cys	Lys 250	Asp	Ser	Leu	Gly	Trg 255
Met	Phe	Asn	Arg	Leu 260	Asp	Thr	Asn	Tyr	Asp 265	Leu	Leu	Leu	Asp	Glr 270
Ser	Glu	Leu	Arg	Ser 275	Ile	Tyr	Leu	Asp	Lys 280	Asn	Glu	Gln	Cys	Th: 285
Lys	Ala	Phe	Phe	Asn 290	Ser	Cys	Asp	Thr	Tyr 295	Lys	Asp	Ser	Leu	300
Ser	Asn	Asn	Glu	Trp 305	Суз	Tyr	Суз	Phe	Gln 310	Arg	Gln	Gln	Asp	Pro 315
Pro	Cys	Gln	Thr	Glu 320	Leu	Ser	Asn	Ile	Gln 325	Lys	Arg	Gln	Gly	Va]

Lys Lys Leu Leu Gly Gln Tyr Ile Pro Leu Cys Asp Glu Asp Gly 335

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Tyr Tyr Lys Pro Thr Gln Cys His Gly Ser Val Gly Gln Cys Trp
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                                                          360
Cys Val Asp Arg Tyr Gly Asn Glu Val Met Gly Ser Arg Ile Asn
Gly Val Ala Asp Cys Ala Ile Asp Phe Glu Ile Ser Gly Asp Phe
                                      385
Ala Ser Gly Asp Phe His Glu Trp Thr Asp Asp Glu Asp Asp Glu
Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu Asp Asp Asp Glu
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Asp Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His Asp Val Tyr
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                                      430
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<212> DNA
<213> Homo sapiens
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<211> 229

<212> PRT

<213> Homo sapiens

<400> 447

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Ala Leu Pro Pro Val Leu Leu Pro Gly Ala Ala Gly Phe Thr Pro
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Ser Leu Asp Ser Asp Phe Thr Phe Thr Leu Pro Ala Gly Gln Lys 35 40 45

Glu Cys Phe Tyr Gln Pro Met Pro Leu Lys Ala Ser Leu Glu Ile 50 55 60

Glu Tyr Gln Val Leu Asp Gly Ala Gly Leu Asp Ile Asp Phe His 65 70 75

Leu Ala Ser Pro Glu Gly Lys Thr Leu Val Phe Glu Gln Arg Lys 80 85 90

Ser Asp Gly Val His Thr Val Glu Thr Glu Val Gly Asp Tyr Met  $95 \\ 100 \\ 105$ 

Phe Cys Phe Asp Asn Thr Phe Ser Thr Ile Ser Glu Lys Val Ile

				110					115					120
Phe F	?he	Glu	Leu	Ile 125	Leu	Asp	Asn	Met	Gly 130	Glu	Gln	Ala	Gln	Glu 135
Gln G	Slu	Asp	Trp	Lys 140	Lys	Tyr	Ile	Thr	Gly 145	Thr	Asp	Ile	Leu	Asp 150
Met I	.ys	Leu	Glu	Asp 155	Ile	Leu	Glu	Ser	Ile 160	Asn	Ser	Ile	Lys	Ser 165
Arg I	Leu	Ser	Lys	Ser 170	Gly	His	Ile	Gln	Ile 175	Leu	Leu	Arg	Ala	Phe 180
Glu <i>F</i>	Ala	Arg	Asp	Arg 185	Asn	Ile	Gln	Glu	Ser 190	Asn	Phe	Asp	Arg	Val 195
Asn I	Phe	Trp	Ser	Met 200	Val	Asn	Leu	Val	Val 205	Met	Val	Val	Val	Ser 210
Ala	Ile	Gln	Val	Tyr 215	Met	Leu	Lys	Ser	Leu 220	Phe	Glu	Asp	Lys	Arg 225
Lys S	Ser	Arg	Thr											
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<212> DNA
<213> Homo sapiens
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aaaaaaaaa 859

 <400> 452

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 Lys Glu Leu Pro Ser Pro Arg Ile Ser Cys Pro Lys Gly Ser Lys 45

50 55 60

Trp Met Asp Ala Asp Leu Ala Cys Gln Lys Arg Pro Ser Gly Lys 65 70 75

Leu Val Ser Val Leu Ser Gly Ala Glu Gly Ser Phe Val Ser Ser 80 85 90

Leu Val Arg Ser Ile Ser Asn Ser Tyr Ser Tyr Ile Trp Ile Gly 95 100 105

Leu His Asp Pro Thr Gln Gly Ser Glu Pro Asp Gly Asp Gly Trp
110 115 120

Glu Trp Ser Ser Thr Asp Val Met Asn Tyr Phe Ala Trp Glu Lys 125 130 135

Asn Pro Ser Thr Ile Leu Asn Pro Gly His Cys Gly Ser Leu Ser 140 145

Arg Ser Thr Gly Phe Leu Lys Trp Lys Asp Tyr Asn Cys Asp Ala 155 160 165

Lys Leu Pro Tyr Val Cys Lys Phe Lys Asp 170 175

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<211> 550

<212> DNA

<213> Homo sapiens

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ggcgctcctg gcgctggtgc tggctgcctg cggagagctg gcgccggccc 150

tgcgctgcta cgtctgtccg gagcccacag gagtgtcgga ctgtgtcacc 200
atcgccacct gcaccacaa cgaaaccatg tgcaagacca cactctactc 250

ccgggagata gtgtacccct tccaggggga ctccacggtg accaagtcct 300

gtgccagcaa gtgtaagccc tcggatgtgg atggcatcgg ccagaccctg 350

cccgtgtcct gctgcaatac tgagctgtgc aatgtagacg gggcgcccgc 400

tctgaacagc ctccactgcg gggccctcac gctcctcca ctcttgagcc 450

tccgactgta gagtccccgc ccaccccat ggccctatgc ggcccagccc 500

cgaatgcctt gaagaagtgc cccctgcacc aggaaaaaaa aaaaaaaaa 550

<210> 454

<211> 125

<212> PRT

<213> Homo sapiens

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Ala Leu Asn Ser Leu His Cys Gly Ala Leu Thr Leu Leu Pro Leu 115

Leu Ser Leu Arg Leu

<210> 455 <211> 1518 <212> DNA <213> Homo sapiens

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<210> 456

<211> 266

<212> PRT

<213> Homo sapiens

<400> 456

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Met Val Ala Ala Ala Leu Gly Gly His Pro Leu Leu Gly Val Ser 20 25 30

Ala Thr Leu Asn Ser Val Leu Asn Ser Asn Ala Ile Lys Asn Leu 35 40 45

Pro Pro Pro Leu Gly Gly Ala Ala Gly His Pro Gly Ser Ala Val
50 55 60

Ser Ala Ala Pro Gly Ile Leu Tyr Pro Gly Gly Asn Lys Tyr Gln 65 70 75

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Thr Ile Asp Asn Tyr Gln Pro Tyr Pro Cys Ala Glu Asp Glu Glu
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Cys Gly Thr Asp Glu Tyr Cys Ala Ser Pro Thr Arg Gly Gly Asp
                                    100
Ala Gly Val Gln Ile Cys Leu Ala Cys Arg Lys Arg Lys Arg
                                    115
Cys Met Arg His Ala Met Cys Cys Pro Gly Asn Tyr Cys Lys Asn
                125
Gly Ile Cys Val Ser Ser Asp Gln Asn His Phe Arg Gly Glu Ile
                140
Glu Glu Thr Ile Thr Glu Ser Phe Gly Asn Asp His Ser Thr Leu
                                    160
                155
Asp Gly Tyr Ser Arg Arg Thr Thr Leu Ser Ser Lys Met Tyr His
                                     175
Thr Lys Gly Gln Glu Gly Ser Val Cys Leu Arg Ser Ser Asp Cys
                                                         195
                                     190
Ala Ser Gly Leu Cys Cys Ala Arg His Phe Trp Ser Lys Ile Cys
                                                         210
                                     205
Lys Pro Val Leu Lys Glu Gly Gln Val Cys Thr Lys His Arg Arg
                                                         225
                215
Lys Gly Ser His Gly Leu Glu Ile Phe Gln Arg Cys Tyr Cys Gly
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                                     235
Glu Gly Leu Ser Cys Arg Ile Gln Lys Asp His His Gln Ala Ser
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Asn Ser Ser Arg Leu His Thr Cys Gln Arg His
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<210> 457

<211> 638

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 30, 123, 133, 139, 180, 214, 259, 282, 308, 452, 467, 471, 473, 509, 556

<223> unknown base

<400> 457

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cattttttt tcttctcct tcnggagtcc ttntgagang atggttttgg 150
gcgcagcggg agctaacccg gtttttgtn gcgatggtag cggcggtttt 200

cggcggccac cttntgctgg gagtgagcgc caccttgaat cggttttcaa 250 ttccaacgnt atcaagaacc tgccccacc gntgggcggc gctgcggggc 300 acccaggntt tgcagtcagc gccgcgcgg gaatcctgta cccgggcggg 350 aataagtacc agaccattga caattaccag ccgtacccgt gcgcagagga 400 cgaggagtgc ggcactgatg agtactgcgc tagtcccacc cgcggagggg 450 angcggcgt gcaaatntgt ntngcctgca ggaagcgccg aaaacgctgc 500 atgcgtcang ctatgtgctg ccccgggaat tactgcaaaa atggaatatg 550 tgtgtnttct gatcaaaatc atttccgagg agaaattgag gaaaccatca 600 ctgaaagctt tggtaatgat catagcacct tggatggg 638

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<213> Homo sapiens

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<210> 459

<211> 747

<212> PRT

<213> Homo sapiens

<400> 459

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Arg Ile Ile Leu Cys Phe Leu Ile Val Tyr Met Ala Ile Leu Val 20 25 30

Gly Thr Asp Gln Asp Phe Tyr Ser Leu Leu Gly Val Ser Lys Thr 35 40 45

Ala Ser Ser Arg Glu Ile Arg Gln Ala Phe Lys Lys Leu Ala Leu 50 55 60

Lys Leu His Pro Asp Lys Asn Pro Asn Asn Pro Asn Ala His Gly 65 70 75

Asp Phe Leu Lys Ile Asn Arg Ala Tyr Glu Val Leu Lys Asp Glu 80 85 90

Asp Leu Arg Lys Lys Tyr Asp Lys Tyr Gly Glu Lys Gly Leu Glu 95 100 105

Asp Asn Gln Gly Gly Gln Tyr Glu Ser Trp Asn Tyr Tyr Arg Tyr 110 115 120

Asp Phe Gly Ile Tyr Asp Asp Pro Glu Ile Ile Thr Leu Glu 125 130 135

Arg Arg Glu Phe Asp Ala Ala Val Asn Ser Gly Glu Leu Trp Phe 140 145 150

Val Asn Phe Tyr Ser Pro Gly Cys Ser His Cys His Asp Leu Ala 155 160 165

Pro Thr Trp Arg Asp Phe Ala Lys Glu Val Asp Gly Leu Leu Arg 170 175 180

Ile Gly Ala Val Asn Cys Gly Asp Asp Arg Met Leu Cys Arg Met 185 190 195

Lys Gly Val Asn Ser Tyr Pro Ser Leu Phe Ile Phe Arg Ser Gly

				200					205					210
Met	Ala	Pro	Val	Lys 215	Tyr	His	Gly	Asp	Arg 220	Ser	Lys	Glu	Ser	Leu 225
Val	Ser	Phe	Ala	Met 230	Gln	His	Val	Arg	Ser 235	Thr	Val	Thr	Glu	Leu 240
Trp	Thr	Gly	Asn	Phe 245	Val	Asn	Ser	Ile	Gln 250	Thr	Ala	Phe	Ala	Ala 255
Gly	Ile	Gly	Trp	Leu 260	Ile	Thr	Phe	Cys	Ser 265	Lys	Gly	Gly	Asp	Cys 270
Leu	Thr	Ser	Gln	Thr 275	Arg	Leu	Arg	Leu	Ser 280	Gly	Met	Leu	Phe	Leu 285
Asn	Ser	Leu	Asp	Ala 290	Lys	Glu	Ile	Tyr	Leu 295	Glu	Val	Ile	His	Asn 300
Leu	Pro	Asp	Phe	Glu 305	Leu	Leu	Ser	Ala	Asn 310	Thr	Leu	Glu	Asp	Arg 315
Leu	Ala	His	His	Arg 320	Trp	Leu	Leu	Phe	Phe 325	His	Phe	Gly	Lys	Asn 330
Glu	Asn	Ser	Asn	Asp 335	Pro	Glu	Leu	Lys	Lys 340	Leu	Lys	Thr	Leu	Leu 345
Lys	Asn	Asp	His	Ile 350	Gln	Val	Gly	Arg	Phe 355	Asp	Cys	Ser	Ser	Ala 360
Pro	Asp	Ile	Cys	Ser 365	Asn	Leu	Tyr	Val	Phe 370	Gln	Pro	Ser	Leu	Ala 375
Val	Phe	Lys	Gly	Gln 380	Gly	Thr	Lys	Glu	Tyr 385	Glu	Ile	His	His	Gly 390
Lys	Lys	Ile	Leu	Tyr 395	Asp	Ile	Leu	Ala	Phe 400	Ala	Lys	Glu	Ser	Val 405
Asn	Ser	His	Val	Thr 410	Thr	Leu	Gly	Pro	Gln 415	Asn	Phe	Pro	Ala	Asn 420
Asp	Lys	Glu	Pro	Trp 425	Leu	Val	Asp	Phe	Phe 430	Ala	Pro	Trp	Cys	Pro 435
Pro	Cys	Arg	Ala	Leu 440		Pro	Glu	Leu	Arg 445		Ala	Ser	Asn	Leu 450
Leu	Tyr	Gly	Gln	Leu 455		Phe	Gly	Thr	Leu 460	Asp	Cys	Thr	Val	His 465
Glu	Gly	Leu	Суз	Asn 470		Tyr	Asn	Ile	Gln 475	Ala	Tyr	Pro	Thr	Thr 480
Val	Val	Phe	Asn	Gln 485		Asn	Ile	His	Glu 490	Tyr	Glu	Gly	His	His 495

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Ser Ala Glu Gln Ile Leu Glu Phe Ile Glu Asp Leu Met Asn Pro
                                                        510
Ser Val Val Ser Leu Thr Pro Thr Thr Phe Asn Glu Leu Val Thr
                                    520
Gln Arg Lys His Asn Glu Val Trp Met Val Asp Phe Tyr Ser Pro
Trp Cys His Pro Cys Gln Val Leu Met Pro Glu Trp Lys Arg Met
                                    550
                545
Ala Arg Thr Leu Thr Gly Leu Ile Asn Val Gly Ser Ile Asp Cys
                560
Gln Gln Tyr His Ser Phe Cys Ala Gln Glu Asn Val Gln Arg Tyr
                                    580
                575
Pro Glu Ile Arg Phe Phe Pro Pro Lys Ser Asn Lys Ala Tyr Gln
                                    595
Tyr His Ser Tyr Asn Gly Trp Asn Arg Asp Ala Tyr Ser Leu Arg
Ile Trp Gly Leu Gly Phe Leu Pro Gln Val Ser Thr Asp Leu Thr
Pro Gln Thr Phe Ser Glu Lys Val Leu Gln Gly Lys Asn His Trp
                635
Val Ile Asp Phe Tyr Ala Pro Trp Cys Gly Pro Cys Gln Asn Phe
Ala Pro Glu Phe Glu Leu Leu Ala Arg Met Ile Lys Gly Lys Val
                                                         675
                665
Lys Ala Gly Lys Val Asp Cys Gln Ala Tyr Ala Gln Thr Cys Gln
Lys Ala Gly Ile Arg Ala Tyr Pro Thr Val Lys Phe Tyr Phe Tyr
Glu Arg Ala Lys Arg Asn Phe Gln Glu Glu Gln Ile Asn Thr Arg
Asp Ala Lys Ala Ile Ala Ala Leu Ile Ser Glu Lys Leu Glu Thr
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Leu Arg Asn Gln Gly Lys Arg Asn Lys Asp Glu Leu
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<sup>&</sup>lt;210> 460

<sup>&</sup>lt;211> 24

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic oligonucleotide probe

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<210> 461
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 461
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<210> 462
<211> 50
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 462
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<210> 463
<211> 1818
<212> DNA
<213> Homo sapiens
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 caccatcatc tactcctact tggagtcgtt ggtgaagttt ttcattcctc 150
 agaggagaaa atctgtggct ggggagattg ttctcattac tggagctggg 200
 catggaatag gcaggcagac tacttatgaa tttgcaaaac gacagagcat 250
 attggttctg tgggatatta ataagcgcgg tgtggaggaa actgcagctg 300
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 tgatgtaaca atcgtggtga ataatgctgg gacagtatat ccagccgatc 450
 ttctcagcac caaggatgaa gagattacca agacatttga ggtcaacatc 500
 ctaggacatt tttggatcac aaaagcactt cttccatcga tgatggagag 550
 aaatcatggc cacatcgtca cagtggcttc agtgtgcggc cacgaaggga 600
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 cacagaggtc tgacatcaga acttcaggcc ttgggaaaaa ctggtatcaa 700
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aacctcatgt ctctgcccag tttttgtgaa tactgggttc accaaaaatc 750 caagcacaag attatggcct gtattggaga cagatgaagt cgtaagaagt 800 ctgatagatg gaatacttac caataagaaa atgatttttg ttccatcgta 850 tatcaatatc tttctgagac tacagaagtt tcttcctgaa cgcgcctcag 900 cgattttaaa tcgtatgcag aatattcaat ttgaagcagt ggttggccac 950 aaaatcaaaa tgaaatgaat aaataagctc cagccagaga tgtatgcatg 1000 ataatgatat gaatagtttc gaatcaatgc tgcaaagctt tatttcacat 1050 tttttcagtc ctgataatat taaaaacatt ggtttggcac tagcagcagt 1100 caaacgaaca agattaatta cctgtcttcc tgtttctcaa gaatatttac 1150 gtagtttttc ataggtctgt ttttcctttc atgcctctta aaaacttctg 1200 tgcttacata aacatactta aaaggttttc tttaagatat tttatttttc 1250 catttaaagg tggacaaaag ctacctccct aaaagtaaat acaaagagaa 1300 cttatttaca cagggaaggt ttaagactgt tcaagtagca ttccaatctg 1350 tagccatgcc acagaatatc aacaagaaca cagaatgagt gcacagctaa 1400 gagatcaagt ttcagcaggc agctttatct caacctggac atattttaag 1450 attcagcatt tgaaagattt ccctagcctc ttcctttttc attagcccaa 1500 aacggtgcaa ctctattctg gactttatta cttgattctg tcttctgtat 1550 aactctgaag tccaccaaaa gtggaccctc tatatttcct ccctttttat 1600 agtcttataa gatacattat gaaaggtgac cgactctatt ttaaatctca 1650 gaattttaag ttctagcccc atgataacct ttttctttgt aatttatgct 1700 ttcatatatc cttggtccca gagatgttta gacaatttta ggctcaaaaa 1750 ttaaagctaa cacaggaaaa ggaactgtac tggctattac ataagaaaca 1800 atggacccaa gagaagaa 1818

<210> 464

<211> 300

<212> PRT

<213> Homo sapiens

<400> 464

Met Asn Ile Ile Leu Glu Ile Leu Leu Leu Leu Ile Thr Ile Ile 1 5 10 15

Tyr Ser Tyr Leu Glu Ser Leu Val Lys Phe Phe Ile Pro Gln Arg 20 25 30

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Arg Lys Ser Val Ala Gly Glu Ile Val Leu Ile Thr Gly Ala Gly
His Gly Ile Gly Arg Gln Thr Thr Tyr Glu Phe Ala Lys Arg Gln
Ser Ile Leu Val Leu Trp Asp Ile Asn Lys Arg Gly Val Glu Glu
Thr Ala Ala Glu Cys Arg Lys Leu Gly Val Thr Ala His Ala Tyr
Val Val Asp Cys Ser Asn Arg Glu Glu Ile Tyr Arg Ser Leu Asn
Gln Val Lys Lys Glu Val Gly Asp Val Thr Ile Val Val Asn Asn
                                    115
Ala Gly Thr Val Tyr Pro Ala Asp Leu Leu Ser Thr Lys Asp Glu
Glu Ile Thr Lys Thr Phe Glu Val Asn Ile Leu Gly His Phe Trp
Ile Thr Lys Ala Leu Leu Pro Ser Met Met Glu Arg Asn His Gly
                155
His Ile Val Thr Val Ala Ser Val Cys Gly His Glu Gly Ile Pro
                170
Tyr Leu Ile Pro Tyr Cys Ser Ser Lys Phe Ala Ala Val Gly Phe
                                    190
His Arg Gly Leu Thr Ser Glu Leu Gln Ala Leu Gly Lys Thr Gly
                                    205
Ile Lys Thr Ser Cys Leu Cys Pro Val Phe Val Asn Thr Gly Phe
                                    220
Thr Lys Asn Pro Ser Thr Arg Leu Trp Pro Val Leu Glu Thr Asp
                                    235
                230
Glu Val Val Arg Ser Leu Ile Asp Gly Ile Leu Thr Asn Lys Lys
                                    250
Met Ile Phe Val Pro Ser Tyr Ile Asn Ile Phe Leu Arg Leu Gln
                                    265
Lys Phe Leu Pro Glu Arg Ala Ser Ala Ile Leu Asn Arg Met Gln
                                     280
Asn Ile Gln Phe Glu Ala Val Val Gly His Lys Ile Lys Met Lys
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<sup>&</sup>lt;210> 465

<sup>&</sup>lt;211> 1547

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

<400> 465 cggcggcggc tgcgggcgcg aggtgagggg cgcgaggtga ggggcgcgag 50 gttcccagca ggatgccccg gctctgcagg aagctgaagt gagaggcccg 100 gagagggccc agcccgcccg gggcaggatg accaaggccc ggctgttccg 150 gctgtggctg gtgctggggt cggtgttcat gatcctgctg atcatcgtgt 200 actgggacag cgcaggcgcc gcgcacttct acttgcacac gtccttctct 250 aggeegeaca eggggeegee getgeeeacg eeegggeegg acagggaeag 300 ggageteacg geegaeteeg atgtegaega gtttetggae aagtttetea 350 gtgctggcgt gaagcagagc gaccttccca gaaaggagac ggagcagccg 400 cctgcgccgg ggagcatgga ggagagcgtg agaggctacg actggtcccc 450 ggagcgtgct gcggggcttc tgcgccaact ccagcctggc cttccccacc 550 aaggagegeg cattegaega cateeceaae teggagetga gecaeetgat 600 cgtggacgac cggcacgggg ccatctactg ctacgtgccc aaggtggcct 650 gcaccaactg gaagegegtg atgategtge tgageggaag cetgetgeae 700 cgcggtgcgc cctaccgcga cccgctgcgc atcccgcgcg agcacgtgca 750 caacgccagc gcgcacctga ccttcaacaa gttctggcgc cgctacggga 800 ageteteceg ceaceteatg aaggteaage teaagaagta caccaagtte 850 ctcttcgtgc gcgacccctt cgtgcgcctg atctccgcct tccgcagcaa 900 gttcgagctg gagaacgagg agttctaccg caagttcgcc gtgcccatgc 950 tgcggctgta cgccaaccac accagcctgc ccgcctcggc gcgcgaggcc 1000 ttccgcgctg gcctcaaggt gtccttcgcc aacttcatcc agtacctgct 1050 ggacccgcac acggagaagc tggcgccctt caacgagcac tggcggcagg 1100 tgtaccgcct ctgccacccg tgccagatcg actacgactt cgtggggaag 1150 ctggagactc tggacgagga cgccgcgcag ctgctgcagc tactccaggt 1200 ggaccggcag ctccgcttcc ccccgagcta ccggaacagg accgccagca 1250 gctgggagga ggactggttc gccaagatcc ccctggcctg gaggcagcag 1300 ctgtataaac tctacgaggc cgactttgtt ctcttcggct accccaagcc 1350 cgaaaacctc ctccgagact gaaagctttc gcgttgcttt ttctcgcgtg 1400 cctggaacct gacgcacgcg cactccagtt tttttatgac ctacgatttt 1450 gcaatctggg cttcttgttc actccactgc ctctatccat tgagtactgt 1500 atcgatattg ttttttaaga ttaatatatt tcaggtattt aatacga 1547

<210> 466

<211> 414

<212> PRT

<213> Homo sapiens

<400> 466

Met Thr Lys Ala Arg Leu Phe Arg Leu Trp Leu Val Leu Gly Ser 1 5 10 15

Val Phe Met Ile Leu Leu Ile Ile Val Tyr Trp Asp Ser Ala Gly
20 25 30

Ala Ala His Phe Tyr Leu His Thr Ser Phe Ser Arg Pro His Thr 35 40 45

Gly Pro Pro Leu Pro Thr Pro Gly Pro Asp Arg Asp Arg Glu Leu 50 55 60

Thr Ala Asp Ser Asp Val Asp Glu Phe Leu Asp Lys Phe Leu Ser 65 70 75

Ala Gly Val Lys Gln Ser Asp Leu Pro Arg Lys Glu Thr Glu Gln
80 85 90

Pro Pro Ala Pro Gly Ser Met Glu Glu Ser Val Arg Gly Tyr Asp 95 100 105

Trp Ser Pro Arg Asp Ala Arg Arg Ser Pro Asp Gln Gly Arg Gln 110 115 120

Gln Ala Glu Arg Arg Ser Val Leu Arg Gly Phe Cys Ala Asn Ser 125 130 135

Ser Leu Ala Phe Pro Thr Lys Glu Arg Ala Phe Asp Asp Ile Pro 140 145 150

Asn Ser Glu Leu Ser His Leu Ile Val Asp Asp Arg His Gly Ala 155 160 165

Ile Tyr Cys Tyr Val Pro Lys Val Ala Cys Thr Asn Trp Lys Arg 170 175 180

Val Met Ile Val Leu Ser Gly Ser Leu Leu His Arg Gly Ala Pro 185 190 195

Tyr Arg Asp Pro Leu Arg Ile Pro Arg Glu His Val His Asn Ala 200 205 210

Ser Ala His Leu Thr Phe Asn Lys Phe Trp Arg Arg Tyr Gly Lys 215 220 225

Leu Ser Arg His Leu Met Lys Val Lys Leu Lys Lys Tyr Thr Lys 230 235 240

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Phe Leu Phe Val Arg Asp Pro Phe Val Arg Leu Ile Ser Ala Phe
                                     250
                                                         255
                245
Arg Ser Lys Phe Glu Leu Glu Asn Glu Glu Phe Tyr Arg Lys Phe
                260
Ala Val Pro Met Leu Arg Leu Tyr Ala Asn His Thr Ser Leu Pro
                                    280
Ala Ser Ala Arg Glu Ala Phe Arg Ala Gly Leu Lys Val Ser Phe
                290
Ala Asn Phe Ile Gln Tyr Leu Leu Asp Pro His Thr Glu Lys Leu
                                     310
                305
Ala Pro Phe Asn Glu His Trp Arg Gln Val Tyr Arg Leu Cys His
                320
                                     325
Pro Cys Gln Ile Asp Tyr Asp Phe Val Gly Lys Leu Glu Thr Leu
                                     340
Asp Glu Asp Ala Ala Gln Leu Leu Gln Leu Leu Gln Val Asp Arg
                                     355
Gln Leu Arg Phe Pro Pro Ser Tyr Arg Asn Arg Thr Ala Ser Ser
                                     370
Trp Glu Glu Asp Trp Phe Ala Lys Ile Pro Leu Ala Trp Arg Gln
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Gln Leu Tyr Lys Leu Tyr Glu Ala Asp Phe Val Leu Phe Gly Tyr
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Pro Lys Pro Glu Asn Leu Leu Arg Asp
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<210> 467 <211> 1071 <212> DNA

<213> Homo sapiens

<400> 467
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acgggatggc tacgggaacg cgctatgccg ggaaggtggt ggtcgtgacc 150
gggggcgggc gcggcatcgg agctgggatc gtgcgcgcct tcgtgaacag 200
cggggcccga gtggttatct gcgacaagga tgagtctggg ggccgggccc 250
tggagcagga gctccctgga gctgtcttta tcctctgtga tgtgactcag 300
gaagatgatg tgaagaccct ggtttctgag accatccgcc gatttggccg 350
cctggattgt gttgtcaaca acgctggcca ccacccaccc ccacagaggc 400

ctgaggagac ctctgccag ggattccgcc agctgctgga gctgaaccta 450 ctggggacgt acaccttgac caagctcgcc ctcccctacc tgcggaagag 500 tcaagggaat gtcatcaaca tctccagcct ggtggggca atcggccagg 550 cccaggcagt tccctatgtg gccaccaagg gggcagtaac agccatgacc 600 aaagctttgg ccctggatga aagtccatat ggtgtccgag tcaactgtat 650 ctcccagga aacatctgga ccccgctgtg ggaggagctg gcagccttaa 700 tgccagaccc tagggccaca atccgagagg gcatgctggc ccagccactg 750 ggccgcatgg gccagcccgc tgaggtcgg gctgcggag tgttcctgge 800 ctccgaagcc aacttctgca cgggcattga actgctggt gcggggggtg 850 cagagctggg gtacgggtg aaggccagtc ggagcaccc cgtggacgcc 900 cccgatatcc cttcctgatt tctctcattt ctacttggg ccccctacct 950 aggactctcc caccccaaac tccaacctgt atcagatgca ccgggtcacc ctgcaggttc 1050 ccataaaaac gatttgcagc c 1071

<210> 468

<211> 270

<212> PRT

<213> Homo sapiens

<400> 468

Met Ala Thr Gly Thr Arg Tyr Ala Gly Lys Val Val Val Val Thr 1 5 10 15

Gly Gly Gly Arg Gly Ile Gly Ala Gly Ile Val Arg Ala Phe Val 20 25 30

Asn Ser Gly Ala Arg Val Val Ile Cys Asp Lys Asp Glu Ser Gly 35 40 45

Gly Arg Ala Leu Glu Glu Leu Pro Gly Ala Val Phe Ile Leu
50 55 60

Cys Asp Val Thr Gln Glu Asp Asp Val Lys Thr Leu Val Ser Glu 65 70 75

Thr Ile Arg Arg Phe Gly Arg Leu Asp Cys Val Val Asn Asn Ala 80 85 90

Gly His His Pro Pro Pro Gln Arg Pro Glu Glu Thr Ser Ala Gln
95 100

Gly Phe Arg Gln Leu Leu Glu Leu Asn Leu Leu Gly Thr Tyr Thr 110 115 120

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Leu Thr Lys Leu Ala Leu Pro Tyr Leu Arg Lys Ser Gln Gly Asn
Val Ile Asn Ile Ser Ser Leu Val Gly Ala Ile Gly Gln Ala Gln
                                     145
                140
Ala Val Pro Tyr Val Ala Thr Lys Gly Ala Val Thr Ala Met Thr
                155
                                     160
Lys Ala Leu Ala Leu Asp Glu Ser Pro Tyr Gly Val Arg Val Asn
                                                         180
Cys Ile Ser Pro Gly Asn Ile Trp Thr Pro Leu Trp Glu Glu Leu
Ala Ala Leu Met Pro Asp Pro Arg Ala Thr Ile Arg Glu Gly Met
                200
Leu Ala Gln Pro Leu Gly Arg Met Gly Gln Pro Ala Glu Val Gly
                215
                                     220
Ala Ala Ala Val Phe Leu Ala Ser Glu Ala Asn Phe Cys Thr Gly
                                     235
                230
Ile Glu Leu Leu Val Thr Gly Gly Ala Glu Leu Gly Tyr Gly Cys
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Lys Ala Ser Arg Ser Thr Pro Val Asp Ala Pro Asp Ile Pro Ser
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                260
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<210> 469

<211> 687

<212> DNA

<213> Homo sapiens

<400> 469
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ccagcccagg agccccaaaa gcaagaggaa ggggcaaggg cggcctgggc 150
ccctggcccc tggccctcac caggtgccac tggacctggt gtcacggatg 200
aaaccgtatg cccgcatgga ggagtatgag aggaacatcg aggagatggt 250
ggcccagctg aggaacagct cagagctggc ccagagaaag tgtgaggtca 300
acttgcagct gtggatgtcc aacaagagga gcctgtctcc ctggggctac 350
agcatcaacc acgaccccag ccgtatcccc gtggacctgc cggaggcacg 400
gtgcctgtgt ctgggctgtg tgaacccctt caccatgcag gaggaccgca 450
gcatggtgag cgtgccggtg ttcagccagg ttcctgtgcg ccgccgcctc 500
tgcccgccac cgccccgcac agggccttgc cgccagcgcg cagtcatgga 550

gaccateget gtgggetgea cetgeatett etgaateace tggeecagaa 600 geeaggeeag cageecgaga ceateeteet tgeacetttg tgeeaagaaa 650 ggeetatgaa aagtaaacae tgaettttga aageaag 687

<210> 470

<211> 180

<212> PRT

<213> Homo sapiens

<400> 470

Met Asp Trp Pro His Asn Leu Leu Phe Leu Leu Thr Ile Ser Ile

1 5 10 15

Phe Leu Gly Leu Gly Gln Pro Arg Ser Pro Lys Ser Lys Arg Lys 20 25 30

Gly Gln Gly Arg Pro Gly Pro Leu Ala Pro Gly Pro His Gln Val 35 40 45

Pro Leu Asp Leu Val Ser Arg Met Lys Pro Tyr Ala Arg Met Glu 50 55 60

Glu Tyr Glu Arg Asn Ile Glu Glu Met Val Ala Gln Leu Arg Asn 65 70 75

Ser Ser Glu Leu Ala Gln Arg Lys Cys Glu Val Asn Leu Gln Leu 80 85 90

Trp Met Ser Asn Lys Arg Ser Leu Ser Pro Trp Gly Tyr Ser Ile 95 100 105

Asn His Asp Pro Ser Arg Ile Pro Val Asp Leu Pro Glu Ala Arg 110 115 120

Cys Leu Cys Leu Gly Cys Val Asn Pro Phe Thr Met Gln Glu Asp 125 130 135

Arg Ser Met Val Ser Val Pro Val Phe Ser Gln Val Pro Val Arg
140 145 150

Arg Arg Leu Cys Pro Pro Pro Pro Arg Thr Gly Pro Cys Arg Gln
155 160 165

Arg Ala Val Met Glu Thr Ile Ala Val Gly Cys Thr Cys Ile Phe 170 175 180

<210> 471

<211> 2368

<212> DNA

<213> Homo sapiens

<400> 471

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ctcccgccg agaagcctcg ctcggcgccc aacatggcgg gtgggcgctg 150 cggcccgcag ctaacggcgc tcctggccgc ctggatcgcg gctgtggcgg 200 cgacggcagg ccccgaggag gccgcgctgc cgccggagca gagccgggtc 250 cagcccatga ccgcctccaa ctggacgctg gtgatggagg gcgagtggat 300 gctgaaattt tacgccccat ggtgtccatc ctgccagcag actgattcag 350 aatgggaggc ttttgcaaag aatggtgaaa tacttcagat cagtgtgggg 400 aaggtagatg tcattcaaga accaggtttg agtggccgct tctttgtcac 450 cactctccca gcattttttc atgcaaagga tgggatattc cgccgttatc 500 gtggcccagg aatcttcgaa gacctgcaga attatatctt agagaagaaa 550 tggcaatcag tcgagcctct gactggctgg aaatccccag cttctctaac 600 gatgtctgga atggctggtc tttttagcat ctctggcaag atatggcatc 650 ttcacaacta tttcacagtg actcttggaa ttcctgcttg gtgttcttat 700 gtgtttttcg tcatagccac cttggttttt ggccttttta tgggtctggt 750 cttggtggta atatcagaat gtttctatgt gccacttcca aggcatttat 800 ctgagcgttc tgagcagaat cggagatcag aggaggctca tagagctgaa 850 cagttgcagg atgcggagga ggaaaaagat gattcaaatg aagaagaaaa 900 caaagacagc cttgtagatg atgaagaaga gaaagaagat cttggcgatg 950 aggatgaagc agaggaagaa gaggaggagg acaacttggc tgctggtgtg 1000 gatgaggaga gaagtgaggc caatgatcag gggcccccag gagaggacgg 1050 tgtgacccgg gaggaagtag agcctgagga ggctgaagaa ggcatctctg 1100 agcaaccetg cecagetgae acagaggtgg tggaagaete ettgaggeag 1150 cgtaaaagtc agcatgctga caagggactg tagatttaat gatgcgtttt 1200 caagaataca caccaaaaca atatgtcagc ttccctttgg cctgcagttt 1250 gtaccaaatc cttaattttt cctgaatgag caagcttctc ttaaaagatg 1300 ctctctagtc atttggtctc atggcagtaa gcctcatgta tactaaggag 1350 agtcttccag gtgtgacaat caggatatag aaaaacaaac gtagtgttgg 1400 gatctgtttg gagactggga tgggaacaag ttcatttact taggggtcag 1450 agagtetega ceagaggagg ceatteceag tectaateag cacetteeag 1500 agacaaggct gcaggccctg tgaaatgaaa gccaagcagg agccttggct 1550

cctgagcatc cccaaagtgt aacgtagaag ccttgcatcc ttttcttgtg 1600 taaaqtattt atttttqtca aattqcagga aacatcaggc accacagtgc 1650 atgaaaaatc tttcacagct agaaattgaa agggccttgg gtatagagag 1700 cagetcagaa gtcatcccag ccetctgaat ctcctgtgct atgttttatt 1750 tottaccttt aatttttcca gcatttccac catgggcatt caggctctcc 1800 acactettea etattatete ttggteagag gaeteeaata acageeaggt 1850 ttacatgaac tgtgtttgtt cattctgacc taaggggttt agataatcag 1900 taaccataac ccctqaaqct qtqactqcca aacatctcaa atgaaatgtt 1950 qtqqccatca qaqactcaaa aggaagtaag gattttacaa gacagattaa 2000 aaaaaaattq ttttqtccaa aatataqttq ttqttqattt ttttttaagt 2050 tttctaagca atattttca agccagaagt cctctaagtc ttgccagtac 2100 gggttccctg ggtcttgaac tactttaata ataactaaaa aaccacttct 2200 gattttcctt cagtgatgtg cttttggtga aagaattaat gaactccagt 2250 acctgaaagt gaaagatttg attttgtttc catcttctgt aatcttccaa 2300 agaattatat ctttgtaaat ctctcaatac tcaatctact gtaagtaccc 2350 agggaggcta atttcttt 2368

<210> 472 <211> 349

<212> PRT

<212> PRT

<213> Homo sapiens

<400> 472

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Ala Trp Ile Ala Ala Val Ala Ala Thr Ala Gly Pro Glu Glu Ala 20 25 30

Ala Leu Pro Pro Glu Gln Ser Arg Val Gln Pro Met Thr Ala Ser 35 40 45

Asn Trp Thr Leu Val Met Glu Gly Glu Trp Met Leu Lys Phe Tyr 50 55 60

Ala Pro Trp Cys Pro Ser Cys Gln Gln Thr Asp Ser Glu Trp Glu 65 70 75

Ala Phe Ala Lys Asn Gly Glu Ile Leu Gln Ile Ser Val Gly Lys 80 85 90 Val Asp Val Ile Gln Glu Pro Gly Leu Ser Gly Arg Phe Phe Val Thr Thr Leu Pro Ala Phe Phe His Ala Lys Asp Gly Ile Phe Arg Arg Tyr Arg Gly Pro Gly Ile Phe Glu Asp Leu Gln Asn Tyr Ile Leu Glu Lys Lys Trp Gln Ser Val Glu Pro Leu Thr Gly Trp Lys 145 Ser Pro Ala Ser Leu Thr Met Ser Gly Met Ala Gly Leu Phe Ser 160 155 Ile Ser Gly Lys Ile Trp His Leu His Asn Tyr Phe Thr Val Thr 170 175 Leu Gly Ile Pro Ala Trp Cys Ser Tyr Val Phe Phe Val Ile Ala 190 Thr Leu Val Phe Gly Leu Phe Met Gly Leu Val Leu Val Val Ile Ser Glu Cys Phe Tyr Val Pro Leu Pro Arg His Leu Ser Glu Arg Ser Glu Gln Asn Arg Arg Ser Glu Glu Ala His Arg Ala Glu Gln 235 Leu Gln Asp Ala Glu Glu Glu Lys Asp Asp Ser Asn Glu Glu Glu Asn Lys Asp Ser Leu Val Asp Asp Glu Glu Lys Glu Asp Leu Gly Asp Glu Asp Glu Ala Glu Glu Glu Glu Glu Glu Asp Asn Leu Ala Ala Gly Val Asp Glu Glu Arg Ser Glu Ala Asn Asp Gln Gly Pro Pro Gly Glu Asp Gly Val Thr Arg Glu Glu Val Glu Pro Glu 310 Glu Ala Glu Glu Gly Ile Ser Glu Gln Pro Cys Pro Ala Asp Thr Glu Val Val Glu Asp Ser Leu Arg Gln Arg Lys Ser Gln His Ala 340

Asp Lys Gly Leu

<sup>&</sup>lt;210> 473

<sup>&</sup>lt;211> 24

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

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<210> 474
<211> 24
<212> DNA
<213> Artificial Sequence
<220>
<223> Synthetic oligonucleotide probe
<400> 474
 ctctcctcat ccacaccagc agcc 24
<210> 475
<211> 44
<212> DNA
<213> Artificial Sequence
<223> Synthetic oligonucleotide probe
<400> 475
 gtggatgctg aaattttacg ccccatggtg tccatcctgc cagc 44
<210> 476
<211> 2478
<212> DNA
<213> Homo sapiens
<400> 476
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 caggggcaga aagaaaagag ctcccaaatg ctatatctat tcaggggctc 150
 tcaagaacaa tggaatatca tcctgattta gaaaatttgg atgaagatgg 200
 atatactcaa ttacacttcg actctcaaag caataccagg atagctgttg 250
 tttcagagaa aggatcgtgt gctgcatctc ctccttggcg cctcattgct 300
 qtaattttgg qaatcctatg cttggtaata ctggtgatag ctgtggtcct 350
 gggtaccatg ggggttcttt ccagcccttg tcctcctaat tggattatat 400
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 ctcaaatgaa ttgggattta tagtaaaaca agtgtcttcc caacctgata 550
 attcattttg gataggcctt tctcggcccc agactgaggt accatggctc 600
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<210> 477 <211> 201

<212> PRT

<213> Homo sapiens

<400> 477
Met Glu Tyr His Pro Asp Leu Glu Asn Leu Asp Glu Asp Gly Tyr
10

Thr Gln Leu His Phe Asp Ser Gln Ser Asn Thr Arg Ile Ala Val 20 25 30

Val Ser Glu Lys Gly Ser Cys Ala Ala Ser Pro Pro Trp Arg Leu 35 40 45

Ile Ala Val Ile Leu Gly Ile Leu Cys Leu Val Ile Leu Val Ile 50 55 60

Ala Val Val Leu Gly Thr Met Gly Val Leu Ser Ser Pro Cys Pro
65 70 75

Pro Asn Trp Ile Ile Tyr Glu Lys Ser Cys Tyr Leu Phe Ser Met 80 85 90

Ser Leu Asn Ser Trp Asp Gly Ser Lys Arg Gln Cys Trp Gln Leu 95 100 105

Gly Ser Asn Leu Leu Lys Ile Asp Ser Ser Asn Glu Leu Gly Phe 110 115 120

Ile Val Lys Gln Val Ser Ser Gln Pro Asp Asn Ser Phe Trp Ile 125 130 135

Gly Leu Ser Arg Pro Gln Thr Glu Val Pro Trp Leu Trp Glu Asp 140 145 150

Gly Ser Thr Phe Ser Ser Asn Leu Phe Gln Ile Arg Thr Thr Ala 155 160 165

Thr Gln Glu Asn Pro Ser Pro Asn Cys Val Trp Ile His Val Ser

170 175 180

Val Ile Tyr Asp Gln Leu Cys Ser Val Pro Ser Tyr Ser Ile Cys 185 190 195

Glu Lys Lys Phe Ser Met 200

<210> 478

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 478

gtccacagac agtcatctca ggagcag 27

<210> 479

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 479

acaagtgtct tcccaacctg 20

<210> 480

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 480

atcctcccag agccatggta cctc 24

<210> 481

<211> 51

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 481

ccaaggatag ctgttgtttc agagaaagga tcgtgtgctg catctcctcc 50

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<210> 482

<211> 3819

<212> DNA

<213> Homo sapiens

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<211> 693

<212> PRT

<213> Homo sapiens

<400> 483

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Leu Leu Phe Leu Val Gl<br/>n Gly Ala His Gly Arg Gly His Arg Glu  $20 \hspace{1cm} 25 \hspace{1cm} 30$ 

Asp Phe Arg Phe Cys Ser Gln Arg Asn Gln Thr His Arg Ser Ser 35 40 45

Leu His Tyr Lys Pro Thr Pro Asp Leu Arg Ile Ser Ile Glu Asn 50 55 60

Ser Glu Glu Ala Leu Thr Val His Ala Pro Phe Pro Ala Ala His  $65 \hspace{1.5cm} 70 \hspace{1.5cm} 75$ 

Pro	Ala	Ser	Arg	Ser 80	Phe	Pro	Asp	Pro	Arg 85	Gly	Leu	Tyr	His	Phe 90
Cys	Leu	Tyr	Trp	Asn 95	Arg	His	Ala	Gly	Arg 100	Leu	His	Leu	Leu	Tyr 105
Gly	Lys	Arg	Asp	Phe 110	Leu	Leu	Ser	Asp	Lys 115	Ala	Ser	Ser	Leu	Leu 120
Cys.	Phe	Gln	His	Gln 125	Glu	Glu	Ser	Leu	Ala 130	Gln	Gly	Pro	Pro	Leu 135
Leu	Ala	Thr	Ser	Val 140	Thr	Ser	Trp	Trp	Ser 145	Pro	Gln	Asn	Ile	Ser 150
Leu	Pro	Ser	Ala	Ala 155	Ser	Phe	Thr	Phe	Ser 160	Phe	His	Ser	Pro	Pro 165
His	Thr	Ala	Ala	His 170	Asn	Ala	Ser	Val	Asp 175	Met	Cys	Glu	Leu	Lys 180
Arg	Asp	Leu	Gln	Leu 185	Leu	Ser	Gln	Phe	Leu 190	Lys	His	Pro	Gln	Lys 195
Ala	Ser	Arg	Arg	Pro 200	Ser	Ala	Ala	Pro	Ala 205	Ser	Gln	Gln	Leu	Gln 210
Ser	Leu	Glu	Ser	Lys 215	Leu	Thr	Ser	Val	Arg 220	Phe	Met	Gly	Asp	Met 225
Val	Ser	Phe	Glu	Glu 230	Asp	Arg	Ile	Asn	Ala 235	Thr	Val	Trp	Lys	Leu 240
Gln	Pro	Thr	Ala	Gly 245	Leu	Gln	Asp	Leu	His 250	Ile	His	Ser	Arg	Gln 255
Glu	Glu	Glu	Gln	Ser 260	Glu	Ile	Met	Glu	Tyr 265	Ser	Val	Leu	Leu	Pro 270
Arg	Thr	Leu	Phe	Gln 275	Arg	Thr	Lys	Gly	Arg 280	Ser	Gly	Glu	Ala	Glu 285
Lys	Arg	Leu	Leu	Leu 290	Val	Asp	Phe	Ser	Ser 295	Gln	Ala	Leu	Phe	Gln 300
Asp	Lys	Asn	Ser	Ser 305	Gln	Val	Leu	Gly	Glu 310	Lys	Val	Leu	Gly	Ile 315
Val	Val	Gln	Asn	Thr 320	Lys	Val	Ala	Asn	Leu 325	Thr	Glu	Pro	Val	Val 330
Leu	Thr	Phe	Gln	His 335	Gln	Leu	Gln	Pro	Lys 340	Asn	Val	Thr	Leu	Gln 345
Cys	Val	Phe	Trp	Val 350	Glu	Asp	Pro	Thr	Leu 355	Ser	Ser	Pro	Gly	His 360
Trp	Ser	Ser	Ala	Gly	Cys	Glu	Thr	Val	Arg	Arg	Glu	Thr	Gln	Thr

				365					370					375
Ser	Cys	Phe	Cys	Asn 380	His	Leu	Thr	Tyr	Phe 385	Ala	Val	Leu	Met	Val 390
Ser	Ser	Val	Glu	Val 395	Asp	Ala	Val	His	Lys 400	His	Tyr	Leu	Ser	Leu 405
Leu	Ser	Tyr	Val	Gly 410	Cys	Val	Val	Ser	Ala 415	Leu	Ala	Cys	Leu	Val 420
Thr	Ile	Ala	Ala	Tyr 425	Leu	Cys	Ser	Arg	Val 430	Pro	Leu	Pro	Cys	Arg 435
Arg	Lys	Pro	Arg	Asp 440	Tyr	Thr	Ile	Lys	Val 445	His	Met	Asn	Leu	Leu 450
Leu	Ala	Val	Phe	Leu 455	Leu	Asp	Thr	Ser	Phe 460	Leu	Leu	Ser	Glu	Pro 465
Val	Ala	Leu	Thr	Gly 470	Ser	Glu	Ala	Gly	Cys 475	Arg	Ala	Ser	Ala	Ile 480
Phe	Leu	His	Phe	Ser 485	Leu	Leu	Thr	Cys	Leu 490	Ser	Trp	Met	Gly	Leu 495
Glu	Gly	Tyr	Asn	Leu 500	Tyr	Arg	Leu	Val	Val 505	Glu	Val	Phe	Gly	Thr 510
Tyr	Val	Pro	Gly	Tyr 515	Leu	Leu	Lys	Leu	Ser 520	Ala	Met	Gly	Trp	Gly 525
Phe	Pro	Ile	Phe	Leu 530	Val	Thr	Leu	Val	Ala 535	Leu	Val	Asp	Val	Asp 540
Asn	Tyr	Gly	Pro	Ile 545	Ile	Leu	Ala	Val	His 550	Arg	Thr	Pro	Glu	Gly 555
Val	Ile	Tyr	Pro	Ser 560	Met	Cys	Trp	Ile	Arg 565	Asp	Ser	Leu	Val	Ser 570
Туг	Ile	Thr	Asn	Leu 575	Gly	Leu	Phe	Ser	Leu 580	Val	Phe	Leu	Phe	Asn 585
Met	Ala	Met	Leu	Ala 590	Thr	Met	Val	Val	Gln 595	Ile	Leu	Arg	Leu	Arg 600
Pro	His	Thr	Gln	Lys 605	Trp	Ser	His	Val	Leu 610	Thr	Leu	Leu	Gly	Leu 615
Ser	Leu	Val	Leu	Gly 620	Leu	Pro	Trp	Ala	Leu 625	Ile	Phe	Phe	Ser	Phe 630
Ala	Ser	Gly	Thr	Phe 635		Leu	. Val	Val	Leu 640	Tyr	Leu	Phe	Ser	Ile 645
Ile	Thr	Ser	Phe	Gln 650		Phe	Leu	Ile	Phe 655	Ile	Trp	Tyr	Trp	Ser 660

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Ser Asp Ser Ala Arg Leu Pro Ile Ser Ser Gly Ser Thr Ser Ser 680 685 690

Ser Arg Ile

- <210> 484
- <211> 516
- <212> DNA
- <213> Homo sapiens
- <220>
- <221> unsure
- <222> 68, 70, 84, 147
- <223> unknown base
- <400> 484

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- <210> 485
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- <212> DNA
- <213> Artificial Sequence

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- <220>
- <223> Synthetic oligonucleotide probe
- <400> 485

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- <211> 24
- <212> DNA
- <213> Artificial Sequence

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<211> 345

<212> PRT

<213> Homo sapiens

<400> 488

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Gln Phe Ser Ser Asn Lys Glu Gln Asn Gly Val Gln Asp Pro Gln 35 40 45

His Glu Arg Ile Ile Thr Val Ser Thr Asn Gly Ser Ile His Ser 50 55 60

Pro Arg Phe Pro His Thr Tyr Pro Arg Asn Thr Val Leu Val Trp  $\phantom{-}65\phantom{+}70\phantom{+}75\phantom{+}$ 

Arg Leu Val Ala Val Glu Glu Asn Val Trp Ile Gln Leu Thr Phe 80 85 90

Asp Glu Arg Phe Gly Leu Glu Asp Pro Glu Asp Asp Ile Cys Lys 95 100 105

Tyr Asp Phe Val Glu Val Glu Glu Pro Ser Asp Gly Thr Ile Leu
110 115 120

Gly Arg Trp Cys Gly Ser Gly Thr Val Pro Gly Lys Gln Ile Ser 125 130 135

Lys Gly Asn Gln Ile Arg Ile Arg Phe Val Ser Asp Glu Tyr Phe 140 145 150

Pro Ser Glu Pro Gly Phe Cys Ile His Tyr Asn Ile Val Met Pro 155 160 165

Gln Phe Thr Glu Ala Val Ser Pro Ser Val Leu Pro Pro Ser Ala 170 175 180

Leu Pro Leu Asp Leu Leu Asn Asn Ala Ile Thr Ala Phe Ser Thr 185 190 195

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Ala Phe Val Phe Gly Arg Lys Ser Arg Val Val Asp Leu Asn Leu
                                     235
                 230
Leu Thr Glu Glu Val Arg Leu Tyr Ser Cys Thr Pro Arg Asn Phe
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Ser Val Ser Ile Arg Glu Glu Leu Lys Arg Thr Asp Thr Ile Phe
Trp Pro Gly Cys Leu Leu Val Lys Arg Cys Gly Gly Asn Cys Ala
Cys Cys Leu His Asn Cys Asn Glu Cys Gln Cys Val Pro Ser Lys
Val Thr Lys Lys Tyr His Glu Val Leu Gln Leu Arg Pro Lys Thr
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<212> DNA
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His Val Ile Val Asp Cys Thr Asp Lys His Leu Thr Glu Ile Pro
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Gly Gly Ile Pro Thr Asn Thr Thr Asn Leu Thr Leu Thr Ile Asn 65 70 75

His Ile Pro Asp Ile Ser Pro Ala Ser Phe His Arg Leu Asp His 80 85 90

Leu Val Glu Ile Asp Phe Arg Cys Asn Cys Val Pro Ile Pro Leu 95 100 105

Gly Ser Lys Asn Asn Met Cys Ile Lys Arg Leu Gln Ile Lys Pro 110 115 120

Arg Ser Phe Ser Gly Leu Thr Tyr Leu Lys Ser Leu Tyr Leu Asp 125 130 135

Gly Asn Gln Leu Leu Glu Ile Pro Gln Gly Leu Pro Pro Ser Leu 140 145 150

Gln Leu Leu Ser Leu Glu Ala Asn Asn Ile Phe Ser Ile Arg Lys 155 160 165

Glu Asn Leu Thr Glu Leu Ala Asn Ile Glu Ile Leu Tyr Leu Gly
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Gln Asn Cys Tyr Tyr Arg Asn Pro Cys Tyr Val Ser Tyr Ser Ile 185 190 195

Glu Lys Asp Ala Phe Leu Asn Leu Thr Lys Leu Lys Val Leu Ser 200 205 210

Leu Lys Asp Asn Asn Val Thr Ala Val Pro Thr Val Leu Pro Ser 215 220 225

Thr Leu Thr Glu Leu Tyr Leu Tyr Asn Asn Met Ile Ala Lys Ile 230 235 240

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Ala	Pro	Cys	Lys	Asn 275	Asn	Ser	Pro	Leu	Gln 280	Ile	Pro	Val	Asn	Ala 285
Phe	Asp	Ala	Leu	Thr 290	Glu	Leu	Lys	Val	Leu 295	Arg	Leu	His	Ser	Asn 300
Ser	Leu	Gln	His	Val 305	Pro	Pro	Arg	Trp	Phe 310	Lys	Asn	Ile	Asn	Lys 315
Leu	Gln	Glu	Leu	Asp 320	Leu	Ser	Gln	Asn	Phe 325	Leu	Ala	Lys	Glu	Ile 330
Gly	Asp	Ala	Lys	Phe 335	Leu	His	Phe	Leu	Pro 340	Ser	Leu	Ile	Gln	Leu 345
Asp	Leu	Ser	Phe	Asn 350	Phe	Glu	Leu	Gln	Val 355	Tyr	Arg	Ala	Ser	Met 360
Asn	Leu	Ser	Gln	Ala 365	Phe	Ser	Ser	Leu	Lys 370	Ser	Leu	Lys	Ile	Leu 375
Arg	Ile	Arg	Gly	Tyr 380	Val	Phe	Lys	Glu	Leu 385	Lys	Ser	Phe	Asn	Leu 390
Ser	Pro	Leu	His	Asn 395	Leu	Gln	Asn	Leu	Glu 400	Val	Leu	Asp	Leu	Gly 405
Thr	Asn	Phe	Ile	Lys 410	Ile	Ala	Asn	Leu	Ser 415	Met	Phe	Lys	Gln	Phe 420
Lys	Arg	Leu	Lys	Val 425	Ile	Asp	Leu	Ser	Val 430	Asn	Lys	Ile	Ser	Pro 435
Ser	Gly	Asp	Ser	Ser 440	Glu	Val	Gly	Phe	Cys 445	Ser	Asn	Ala	Arg	Thr 450
Ser	Val	Glu	Ser	Tyr 455	Glu	Pro	Gln	Val	Leu 460	Glu	Gln	Leu	His.	Tyr 465
Phe	Arg	Tyr	Asp	Lys 470	Tyr	Ala	Arg	Ser	Cys 475	Arg	Phe	Lys	Asn	Lys 480
Glu	Ala	Ser	Phe	Met 485	Ser	Val	Asn	Glu	Ser 490	Cys	Tyr	Lys	Tyr	Gly 495
Gln	Thr	Leu	Asp	Leu 500	Ser	Lys	Asn	Ser	Ile 505	Phe	Phe	Val	Lys	Ser 510
Ser	Asp	Phe	Gln	His 515	Leu	Ser	Phe	Leu	Lys 520	Cys	Leu	Asn	Leu	Ser 525
Gly	Asn	Leu	Ile	Ser 530	Gln	Thr	Leu	Asn	Gly 535	Ser	Glu	Phe	Gln	Pro 540
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Thr	His	Met	Leu	Asn 590	Phe	Thr	Lys	Asn	Leu 595	Lys	Val	Leu	Gln	Lys 600
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Met	Glu	Ser	Glu	Ser 620	Leu	Arġ	Thr	Leu	Glu 625	Phe	Arg	Gly	Asn	His 630
Leu	Asp	Val	Leu	Trp 635	Arg	Glu	Gly	Asp	Asn 640	Arg	Tyr	Leu	Gln	Leu 645
Phe	Lys	Asn	Leu	Leu 650	Lys	Leu	Glu	Glu	Leu 655	Asp	Ile	Ser	Lys	Asn 660
Ser	Leu	Ser	Phe	Leu 665	Pro	Ser	Gly	Val	Phe 670	Asp	Gly	Met	Pro	Pro 675
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Ser	Trp	Lys	Lys	Leu 695	Gln	Cys	Leu	Lys	Asn 700	Leu	Glu	Thr	Leu	Asp 705
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Arg	Ser	Leu	Thr	Lys 740	Tyr	Phe	Leu	Gln	Asp 745	Ala	Phe	Gln	Leu	Arg 750
Tyr	Leu	Asp	Leu	Ser 755	Ser	Asn	Lys	Ile	Gln 760	Met	Ile	Gln	Lys	Thr 765
Ser	Phe	Pro	Glu	Asn 770	Val	Leu	Asn	Asn	Leu 775	Lys	Met	Leu	Leu	Leu 780
His	His	Asn	Arg	Phe 785	Leu	Суз	Thr	Cys	Asp 790	Ala	Val	Trp	Phe	Val 795
Trp	Trp	Val	Asn	His 800	Thr	Glu	Val	Thr	Ile 805	Pro	Tyr	Leu	Ala	Thr 810
Asp	Val	Thr	Cys	Val 815	Gly	Pro	Gly	Ala	His 820	Lys	Gly	Gln	Ser	Val 825
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Tyr His Phe Cys Lys Ala Lys Ile Lys Gly Tyr Gln Arg Leu Ile
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Ser Pro Asp Cys Cys Tyr Asp Ala Phe Ile Val Tyr Asp Thr Lys
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Asp Pro Ala Val Thr Glu Trp Val Leu Ala Glu Leu Val Ala Lys
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Leu Glu Asp Pro Arg Glu Lys His Phe Asn Leu Cys Leu Glu Glu
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Arg Asp Trp Leu Pro Gly Gln Pro Val Leu Glu Asn Leu Ser Gln
Ser Ile Gln Leu Ser Lys Lys Thr Val Phe Val Met Thr Asp Lys
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Tyr Ala Lys Thr Glu Asn Phe Lys Ile Ala Phe Tyr Leu Ser His
                                     970
Gln Arg Leu Met Asp Glu Lys Val Asp Val Ile Ile Leu Ile Phe
                                     985
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Leu Glu Lys Pro Phe Gln Lys Ser Lys Phe Leu Gln Leu Arg Lys
                                    1000
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Arg Leu Cys Gly Ser Ser Val Leu Glu Trp Pro Thr Asn Pro Gln
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<sup>&</sup>lt;210> 498

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Ser Arg Ser Tyr Pro Cys Asp Glu Lys Lys Gln Asn Asp Ser Val 35 40 45

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Thr	His	Ile	Thr	Asn 80	Glu	Ser	Phe	Gln	Gly 85	Leu	Gln	Asn	Leu	Thr 90

Lys Ile Asn Leu Asn His Asn Pro Asn Val Gln His Gln Asn Gly

Asn Pro Gly Ile Gln Ser Asn Gly Leu Asn Ile Thr Asp Gly Ala

Phe Leu Asn Leu Lys Asn Leu Arg Glu Leu Leu Leu Glu Asp Asn 125 130 135

Gln Leu Pro Gln Ile Pro Ser Gly Leu Pro Glu Ser Leu Thr Glu 140 145 150

Leu Ser Leu Ile Gln Asn Asn Ile Tyr Asn Ile Thr Lys Glu Gly
155 160 165

Ile Ser Arg Leu Ile Asn Leu Lys Asn Leu Tyr Leu Ala Trp Asn 170 175 180

Cys Tyr Phe Asn Lys Val Cys Glu Lys Thr Asn Ile Glu Asp Gly 185 190 195

Val Phe Glu Thr Leu Thr Asn Leu Glu Leu Leu Ser Leu Ser Phe 200 205 210

Asn Ser Leu Ser His Val Pro Pro Lys Leu Pro Ser Ser Leu Arg 215 220 225

Lys Leu Phe Leu Ser Asn Thr Gln Ile Lys Tyr Ile Ser Glu Glu 230 235 240

Asp Phe Lys Gly Leu Ile Asn Leu Thr Leu Leu Asp Leu Ser Gly 245 250

Asn Cys Pro Arg Cys Phe Asn Ala Pro Phe Pro Cys Val Pro Cys 260 265 270

Asp Gly Gly Ala Ser Ile Asn Ile Asp Arg Phe Ala Phe Gln Asn 275 280 285

Leu Thr Gln Leu Arg Tyr Leu Asn Leu Ser Ser Thr Ser Leu Arg 290 295 300

Leu Asp Leu Glu Phe Asn Tyr Leu Val Gly Glu Ile Val Ser Gly 320 325 330

Ala Phe Leu Thr Met Leu Pro Arg Leu Glu Ile Leu Asp Leu Ser 335 340 345

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Leu Lys	Phe	Phe	Asn 680	Trp	Thr	Leu	Leu	Gln 685	Gln	Phe	Pro	Arg	Leu 690
Glu Leu	Leu	Asp	Leu 695	Arg	Gly	Asn	Lys	Leu 700	Leu	Phe	Leu	Thr	Asp 705
Ser Leu	Ser	Asp	Phe 710	Thr	Ser	Ser	Leu	Arg 715	Thr	Leu	Leu	Leu	Ser 720
His Asn	Arg	Ile	Ser 725	His	Leu	Pro	Ser	Gly 730	Phe	Leu	Ser	Glu	Val 735
Ser Ser	Leu	Lys	His 740	Leu	Asp	Leu	Ser	Ser 745	Asn	Leu	Leu	Lys	Thr 750
Ile Asn	Lys	Ser	Ala 755	Leu	Glu	Thr	Lys	Thr 760	Thr	Thr	Lys	Leu	Ser 765
Met Leu	Glu	Leu	His 770	Gly	Asn	Pro	Phe	Glu 775	Cys	Thr	Cys	Asp	Ile 780
Gly Asp	Phe	Arg	<b>A</b> rg 785	Trp	Met	Asp	Glu	His 790	Leu	Asn	Val	Lys	Ile 795
Pro Arg	Leu	Val	Asp 800	Val	Ile	Cys	Ala	Ser 805	Pro	Gly	Asp	Gln	Arg 810
Gly Lys	Ser	Ile	Val 815	Ser	Leu	Glu	Leu	Thr 820	Thr	Cys	Val	Ser	Asp 825
Val Thr	Ala	Val	Ile 830	Leu	Phe	Phe	Phe	Thr 835	Phe	Phe	Ile	Thr	Thr 840
Met Val	Met	Leu	Ala 845	Ala	Leu	Ala	His	His 850	Leu	Phe	Tyr	Trp	Asp 855
Val Trp	Phe	Ile	Туг 860		Val	Суѕ	Leu	Ala 865	Lys	Val	Lys	Gly	Tyr 870
Arg Ser	Leu	Ser	Thr 875		Gln	Thr	Phe	Tyr 880	Asp	Ala	Tyr	Ile	Ser 885
Tyr Asp	Thr	Lys	Asp 890		Ser	Val	Thr	Asp 895	Trp	Val	Ile	Asn	Glu 900
Leu Arg	Tyr	His	Leu 905		Glu	Ser	Arg	Asp 910	Lys	Asn	Val	. Leu	Leu 915
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<210> 502

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Ile Phe Ile Leu Leu Glu Pro Val Leu Gln His Ser Gln Tyr Leu
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Arg Leu Arg Gln Arg Ile Cys Lys Ser Ser Ile Leu Gln Trp Pro
Asp Asn Pro Lys Ala Glu Gly Leu Phe Trp Gln Thr Leu Arg Asn
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<sup>&</sup>lt;211> 273

<sup>&</sup>lt;212> PRT

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 506

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Lys Asp Ser

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<211> 273

<212> PRT

<213> Homo sapiens

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Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val 35 40 45

Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg
50 55 60

Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg 65 70 75

Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro 80 85 90

Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala 95 100 105

Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro
110 115 120

Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln 125 130 135

Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln 140 145 150

Arg Cys Ile Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu 155 160 165

Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly
170 175 180

Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala 185 190 195

Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu 200 205 210 Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala 225

Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu 240

Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu 255

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Lys Asp Ser

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<212> PRT

<213> Homo sapiens

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Cys Ala Val Arg Ala His Gly Asp Pro Val Ser Glu Ser Phe Val
35 40 45

Gln Arg Val Tyr Gln Pro Phe Leu Thr Thr Cys Asp Gly His Arg
50 55 60

Ala Cys Ser Thr Tyr Arg Thr Ile Tyr Arg Thr Ala Tyr Arg Arg 65 70 75

Ser Pro Gly Leu Ala Pro Ala Arg Pro Arg Tyr Ala Cys Cys Pro 80 85 90

Gly Trp Lys Arg Thr Ser Gly Leu Pro Gly Ala Cys Gly Ala Ala 95 100 105

Ile Cys Gln Pro Pro Cys Arg Asn Gly Gly Ser Cys Val Gln Pro 110 115 120

Gly Arg Cys Arg Cys Pro Ala Gly Trp Arg Gly Asp Thr Cys Gln 125 130 135

Ser Asp Val Asp Glu Cys Ser Ala Arg Arg Gly Gly Cys Pro Gln

140 145 150											
Arg Cys Val Asn Thr Ala Gly Ser Tyr Trp Cys Gln Cys Trp Glu 155 160 165											
Gly His Ser Leu Ser Ala Asp Gly Thr Leu Cys Val Pro Lys Gly 170 175 180											
Gly Pro Pro Arg Val Ala Pro Asn Pro Thr Gly Val Asp Ser Ala 185 190 195											
Met Lys Glu Glu Val Gln Arg Leu Gln Ser Arg Val Asp Leu Leu 200 205 210											
Glu Glu Lys Leu Gln Leu Val Leu Ala Pro Leu His Ser Leu Ala 215 220 225											
Ser Gln Ala Leu Glu His Gly Leu Pro Asp Pro Gly Ser Leu Leu 230 235 240											
Val His Ser Phe Gln Gln Leu Gly Arg Ile Asp Ser Leu Ser Glu 245 250 255											
Gln Ile Ser Phe Leu Glu Glu Gln Leu Gly Ser Cys Ser Cys Lys 260 265 270											
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<213> Homo sapiens

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Leu Gly Thr Cys Thr Leu Phe Phe Ala Phe Glu Cys Arg Tyr Leu 50 55 60

Ala Val Gln Leu Ser Pro Ala Ile Pro Val Phe Ala Ala Met Leu 65 70 75

Phe Leu Phe Ser Met Ala Thr Leu Leu Arg Thr Ser Phe Ser Asp 80 85 90

Pro Gly Val Ile Pro Arg Ala Leu Pro Asp Glu Ala Ala Phe Ile 95 100 105

Glu Met Glu Ile Glu Ala Thr Asn Gly Ala Val Pro Gln Gly Gln 110 115 120

Arg Pro Pro Pro Arg Ile Lys Asn Phe Gln Ile Asn Asn Gln Ile 125 130 135

Val Lys Leu Lys Tyr Cys Tyr Thr Cys Lys Ile Phe Arg Pro Pro 140 145 150

Arg Ala Ser His Cys Ser Ile Cys Asp Asn Cys Val Glu Arg Phe 155 160 165

Asp His His Cys Pro Trp Val Gly Asn Cys Val Gly Lys Arg Asn 170 175 180

Tyr Arg Tyr Phe Tyr Leu Phe Ile Leu Ser Leu Ser Leu Leu Thr 185 190 195

Ile Tyr Val Phe Ala Phe Asn Ile Val Tyr Val Ala Leu Lys Ser 200 205 210

Leu Lys Ile Gly Phe Leu Glu Thr Leu Lys Glu Thr Pro Gly Thr 215 220 225

Val Leu Glu Val Leu Ile Cys Phe Phe Thr Leu Trp Ser Val Val

230 235 240

Gly Leu Thr Gly Phe His Thr Phe Leu Val Ala Leu Asn Gln Thr 245 250 255

Thr Asn Glu Asp Ile Lys Gly Ser Trp Thr Gly Lys Asn Arg Val 260 265 270

Gln Asn Pro Tyr Ser His Gly Asn Ile Val Lys Asn Cys Cys Glu 275 280 285

Val Leu Cys Gly Pro Leu Pro Pro Ser Val Leu Asp Arg Gly 290 295 300

Ile Leu Pro Leu Glu Glu Ser Gly Ser Arg Pro Pro Ser Thr Gln 305 310 315

Glu Thr Ser Ser Ser Leu Leu Pro Gln Ser Pro Ala Pro Thr Glu 320 325 330

His Leu Asn Ser Asn Glu Met Pro Glu Asp Ser Ser Thr Pro Glu 335 340 345

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Glu Ala Glu Lys

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<223> unknown base

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Asp Val Tyr Asp Glu Gly Pro Tyr Thr Cys Ser Val Gln Thr Asp 110 115 120

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Ser Gly Asp Tyr Glu Cys Ser Ala Ser Asn Asp Val Ala Ala Pro 200 205 210

Val Val Arg Arg Val Lys Val Thr Val Asn Tyr Pro Pro Tyr Ile 215 220 225

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ttcctcttat tcttctagta ggtttcatag acacctactg tgtgccaggt 1100
ccagtggggg aattcggaga tataagtttc cgagccattg ccacaggaag 1150
cgttcagtgt cgatgggttc atggacctag ataggctgat aacaaagctc 1200
acaagagggt cctgaggatt caggagagac ttatggagcc agcaaagtct 1250
tcctgaagag attgcatttg agccaggtcc tgtag 1285
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<sup>&</sup>lt;210> 529

<sup>&</sup>lt;211> 1380

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Homo sapiens

<sup>&</sup>lt;400> 529

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aaagcatggc tgagaaagca tggggaggag cagcaactgc cagccgtggg 400
gctcaccaac caccagctct tcttcgtggg atttgcccag gtgtggtgct 450
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agecetgece getteegegt getgggeact etetecaact ecegtgaett 550
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<sup>&</sup>lt;211> 39

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

<sup>&</sup>lt;220>

<sup>&</sup>lt;223> Synthetic oligonucleotide probe

<sup>&</sup>lt;400> 530

gaagcagtgc agccagcagt agagaggcac ctgctaaga 39

<sup>&</sup>lt;210> 531

<sup>&</sup>lt;211> 24

<sup>&</sup>lt;212> DNA

<sup>&</sup>lt;213> Artificial Sequence

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Met Met Val Arg Lys Gly Asp Thr Ala Val Leu Arg Cys Tyr Leu 50 55 60

Glu Asp Gly Ala Ser Lys Gly Ala Trp Leu Asn Arg Ser Ser Ile 65 70 75

Ile Ser Thr Leu Asn Lys Arg Asp Tyr Ser Leu Gln Ile Gln Asn 95 100 105

Val Asp Val Thr Asp Asp Gly Pro Tyr Thr Cys Ser Val Gln Thr 110 115 120

Gln His Thr Pro Arg Thr Met Gln Val His Leu Thr Val Gln Val 125 130 135

Pro Pro Lys Ile Tyr Asp Ile Ser Asn Asp Met Thr Val Asn Glu 140 145 150

Gly Thr Asn Val Thr Leu Thr Cys Leu Ala Thr Gly Lys Pro Glu  $155\,$   $160\,$   $165\,$ 

Pro Ser Ile Ser Trp Arg His Ile Ser Pro Ser Ala Lys Pro Phe 170 175 180

Glu Asn Gly Gln Tyr Leu Asp Ile Tyr Gly Ile Thr Arg Asp Gln 185 190 195

Ala Gly Glu Tyr Glu Cys Ser Ala Glu Asn Ala Val Ser Phe Pro 200 205 210

Asp Val Arg Lys Val Lys Val Val Val Asn Phe Ala Pro Thr Ile 215 220 225

Gln Glu Ile Lys Ser Gly Thr Val Thr Pro Gly Arg Ser Gly Leu

235 240 230 Ile Arg Cys Glu Gly Ala Gly Val Pro Pro Pro Ala Phe Glu Trp 250 Tyr Lys Gly Glu Lys Lys Leu Phe Asn Gly Gln Gln Gly Ile Ile Ile Gln Asn Phe Ser Thr Arg Ser Ile Leu Thr Val Thr Asn Val 275 Thr Gln Glu His Phe Gly Asn Tyr Thr Cys Val Ala Ala Asn Lys Leu Gly Thr Thr Asn Ala Ser Leu Pro Leu Asn Pro Pro Ser Thr 315 305 310 Ala Gln Tyr Gly Ile Thr Gly Ser Ala Asp Val Leu Phe Ser Cys Trp Tyr Leu Val Leu Thr Leu Ser Ser Phe Thr Ser Ile Phe Tyr 345 340 Leu Lys Asn Ala Ile Leu Gln 350

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Thr Gln Gln Ala Ala Phe His Gln Ile Ala Met Glu Pro Phe Glu 20 25 30

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Val	Leu	Glu	Met	Tyr 80	Phe	Leu	Asn	Asp	Thr 85	Leu	Ala	Ala	Glu	Asp 90
Ser	Pro	Ser	Phe	Ser 95	Leu	Leu	Gln	Ser	Ala 100	His	Pro	Gly	Glu	His 105
Leu	Ala	Gln	Gly	Ala 110	Ser	Arg	Leu	Gln	Val 115	Leu	Gln	Ala	Gln	Leu 120
Thr	Trp	Val	Arg	Val 125	Ser	His	Glu	His	Leu 130	Leu	Gln	Arg	Val	Asp 135
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Gly	Pro	) Pro	Gly	Ala 275		ı Gly	7 Ser	: Lys	Gly 280	Asp	Phe	e Gly	Arg	Pro 285
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Gly	/ Glr	n Pro	Gly	Leu 305		Gly	/ Val	L Pro	310	Pro	Pro	Gly	, Ala	Val 315
Glz	/ His	s Pro	Gly	Ala	Lys	Gly	, Glu	ı Pro	Gly	ser Ser	: Ala	a Gly	/ Ser	Pro

330 325 320 Gly Arg Ala Gly Leu Pro Gly Ser Pro Gly Ser Pro Gly Ala Thr Gly Leu Lys Gly Ser Lys Gly Asp Thr Gly Leu Gln Gly Gln Gln 360 350 Gly Arg Lys Gly Glu Ser Gly Val Pro Gly Pro Ala Gly Val Lys Gly Glu Gln Gly Ser Pro Gly Leu Ala Gly Pro Lys Gly Ala Pro Gly Gln Ala Gly Gln Lys Gly Asp Gln Gly Val Lys Gly Ser Ser Gly Glu Gln Gly Val Lys Gly Glu Lys Gly Glu Arg Gly Glu Asn 420 410 Ser Val Ser Val Arg Ile Val Gly Ser Ser Asn Arg Gly Arg Ala Glu Val Tyr Tyr Ser Gly Thr Trp Gly Thr Ile Cys Asp Asp Glu 450 Trp Gln Asn Ser Asp Ala Ile Val Phe Cys Arg Met Leu Gly 460 Ser Lys Gly Arg Ala Leu Tyr Lys Val Gly Ala Gly Thr Gly Gln 475 470 Ile Trp Leu Asp Asn Val Gln Cys Arg Gly Thr Glu Ser Thr Leu 490 485 Trp Ser Cys Thr Lys Asn Ser Trp Gly His His Asp Cys Ser His 505 500 Glu Glu Asp Ala Gly Val Glu Cys Ser Val 515 <210> 615 <211> 647

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35 40 45

Ala Asp Leu Thr Gln Ile Asp Val Asn Val Gln Asp His Phe Trp 50 55 60

Asp Gly Lys Gly Cys Glu Met Ile Cys Tyr Cys Asn Phe Ser Glu
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Phe Val Ile Pro Cys Asn Asn Gln

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Ser Asn Glu Ala Thr Asn Ile Thr Pro Lys His Asn Met Lys Ala 50 60

Phe Leu Asp Glu Leu Lys Ala Glu Asn Ile Lys Lys Phe Leu His
65 70 75

Asn Phe Thr Gln Ile Pro His Leu Ala Gly Thr Glu Gln Asn Phe 80 85 90

Gln Leu Ala Lys Gln Ile Gln Ser Gln Trp Lys Glu Phe Gly Leu Asp Ser Val Glu Leu Ala His Tyr Asp Val Leu Leu Ser Tyr Pro 120 115 110 Asn Lys Thr His Pro Asn Tyr Ile Ser Ile Ile Asn Glu Asp Gly 135 130 125 Asn Glu Ile Phe Asn Thr Ser Leu Phe Glu Pro Pro Pro Gly 145 Tyr Glu Asn Val Ser Asp Ile Val Pro Pro Phe Ser Ala Phe Ser 160 Pro Gln Gly Met Pro Glu Gly Asp Leu Val Tyr Val Asn Tyr Ala 170 175 Arg Thr Glu Asp Phe Phe Lys Leu Glu Arg Asp Met Lys Ile Asn Cys Ser Gly Lys Ile Val Ile Ala Arg Tyr Gly Lys Val Phe Arg Gly Asn Lys Val Lys Asn Ala Gln Leu Ala Gly Ala Lys Gly Val Ile Leu Tyr Ser Asp Pro Ala Asp Tyr Phe Ala Pro Gly Val Lys 230 Ser Tyr Pro Asp Gly Trp Asn Leu Pro Gly Gly Gly Val Gln Arg Gly Asn Ile Leu Asn Leu Asn Gly Ala Gly Asp Pro Leu Thr Pro Gly Tyr Pro Ala Asn Glu Tyr Ala Tyr Arg Arg Gly Ile Ala Glu Ala Val Gly Leu Pro Ser Ile Pro Val His Pro Ile Gly Tyr Tyr 295 Asp Ala Gln Lys Leu Leu Glu Lys Met Gly Gly Ser Ala Pro Pro 310 Asp Ser Ser Trp Arg Gly Ser Leu Lys Val Pro Tyr Asn Val Gly 325 Pro Gly Phe Thr Gly Asn Phe Ser Thr Gln Lys Val Lys Met His 340 Ile His Ser Thr Asn Glu Val Thr Arg Ile Tyr Asn Val Ile Gly 355 Thr Leu Arg Gly Ala Val Glu Pro Asp Arg Tyr Val Ile Leu Gly Gly His Arg Asp Ser Trp Val Phe Gly Gly Ile Asp Pro Gln Ser

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Trp Asp Ala		lu Phe 25	Gly	Leu	Leu	Gly 430	Ser	Thr	Glu	Trp	Ala 435
Glu Glu Asn		rg Leu 40	Leu	Gln	Glu	Arg 445	Gly	Val	Ala	Tyr	Ile 450
Asn Ala Asp		er Ile 55	Glu	Gly	Asn	Tyr 460	Thr	Leu	Arg	Val	Asp 465
Cys Thr Pro		et Tyr 70	Ser	Leu	Val	His 475	Asn	Leu	Thr	Lys	Glu 480
Leu Lys Ser		sp Glu 85	Gly	Phe	Glu	Gly 490	Lys	Ser	Leu	Tyr	Glu 495
Ser Trp Thr		ys Ser 00	Pro	Ser	Pro	Glu 505	Phe	Ser	Gly	Met	Pro 510
Arg Ile Ser		eu Gly 15	Ser	Gly	Asn	Asp 520	Phe	Glu	Val	Phe	Phe 525
Gln Arg Leu		le Ala 30	Ser	Gly	Arg	Ala 535	Arg	Tyr	Thr	Lys	Asn 540
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Tyr Glu Thi		lu Leu 60	. Val	Glu	Lys	Phe 565	Tyr	Asp	Pro	Met	Phe 570
Lys Tyr His		hr Val 75	Ala	Gln	Val	Arg 580	Gly	Gly	Met	Val	Phe 585
Glu Leu Ala		er Ile 90	e Val	Leu	Pro	Phe 595	Asp	Cys	Arg	Asp	Tyr 600
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Ser Leu Pho		la Val 35	Lys	Asn	Phe	Thr 640	Glu	Ile	Ala	Ser	Lys 645
Phe Ser Gl		eu Gli 550	n Asp	Phe	Asp	Lys 655		Asn	Pro	Ile	Val 660
Leu Arg Me		sn Ası 65	o Gln	Leu	Met	Phe 670		Glu	Arg	Ala	Phe 675

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                 695
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